

**BY ORDER OF THE  
SECRETARY OF THE AIR FORCE**

**AIR FORCE MANUAL 11-2RC-135,  
VOLUME 2**



**7 APRIL 2020**

***Flying Operations***

***RC/OC/WC/TC-135 – AIRCREW  
EVALUATION CRITERIA***

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OPR: ACC/A3TV

Certified by: AF/A3T  
(Maj Gen James A. Jacobson)

Supersedes: AFI11-2RC-135V2,  
23 March 2015

Pages: 70

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This publication implements Air Force Policy Directive (AFPD) 11-4, *Aviation Service*; Air Force Instruction (AFI) 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, and AFI 11-202V2, *Aircrew Standardization and Evaluation Program*. This manual applies to all Air Combat Command (ACC), Air National Guard (ANG) and Air Force Reserve (AFR) aircrews operating the RC/OC/WC/TC-135 and establishes the minimum Air Force standards for training and qualifying personnel performing duties in the RC/OC/WC/TC-135. Major Commands (MAJCOMs)/Direct Reporting Units (DRUs)/Field Operating Agencies (FOAs) are to forward proposed MAJCOM/DRU/FOA-level supplements to this volume to ACC Flight Operations Division (ACC/A3T) for approval prior to publication in accordance with AFI 11-200. Copies of MAJCOM/DRU/FOA-level supplements, after approved and published, will be provided by the issuing MAJCOM/DRU/FOA to ACC/A3T, and the user MAJCOM/DRU/FOA and National Guard Bureau (NGB) offices of primary responsibility. Field units below MAJCOM/DRU/FOA level will forward copies of their supplements to this publication to their parent MAJCOM/DRU/FOA office of primary responsibility for post publication review. Submit recommended changes to this publication to ACC Standardization and Evaluation Branch (ACC/A3TV) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*. The authorities to waive wing and unit level requirements in this publication are identified with a Tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the requestor’s

commander for non-tiered compliance items. Waiver approval authority for C-135 specific aircrew requirements is Operations Directorate, MAJCOM: ACC/A3 (ANG: NGB/A3), unless otherwise specified in this volume or delegated lower and will be routed through the Numbered Air Force (NAF) for comment/approval. (ANG: 170 Operations Group Commander or 238 Combat Training Squadron (CTS) Commander, Offutt AFB, NE, will be notified when situations require an operations group commander or squadron commander approval/waiver.) Waiver requests should utilize the AF Form 679, *Air Force Publication Compliance Item Waiver Request/Approval*.

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## ***SUMMARY OF CHANGES***

This document has been substantially revised and needs to be completely reviewed. Major changes include renumbered grading criteria and the expansion of areas to the specific grading criteria for the Airborne Systems Engineer (ASE) crew positions (**Chapter 8**).

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## Chapter 1

### ROLES AND RESPONSIBILITIES

#### 1.1. Flight Examiners (FEs). FEs:

1.1.1. Should exercise judgment when assigning subjective area grades, when assigning the overall qualification level, and when evaluating in situations not covered explicitly by this AFMAN.

1.1.2. Will use the grading policies contained in AFI 11-202V2, as supplemented, and the evaluation criteria in this manual for conducting all C-135 Flight, Aircrew Training Device (ATD), and Emergency Procedures Evaluations (EPE). (T-2). All evaluations assume smooth air, a stable platform, and normal operating conditions. Compound emergency procedures will not be used. (T-2).

1.1.3. Should schedule all evaluation activity on one sortie (operational aircraft or ATD) to the greatest extent possible. All flight phase requirements may be accomplished in-flight or ATD as specified in this publication or the AFMAN 11-2RC-135V2 Supplement or local guidance. Any evaluation event may be accomplished in an ATD with a Simulator Certification Level 1 (SIMCERT 1) or Training Value Code 1 (TVC 1).

1.1.4. May evaluate any grading area, observed by the evaluator, during all evaluations. If additional training is required for areas outside of the scheduled evaluation, document the training required under the appropriate area on the AF Form 8, *Certificate of Aircrew Qualification*.

1.1.5. Will brief the examinee on the purpose, conduct, and extent of each evaluation. (T-3).

1.1.6. May assist in evaluation mission planning/briefing as tasked by the examinee.

1.1.7. May evaluate from any flight position to conduct a thorough evaluation.

1.1.8. Will apply the grading criteria contained in [Chapter 4](#), as applicable. (T-2).

1.1.9. Evaluate all crewmembers on areas listed in [Table 4.1](#) and all instructors on areas listed in [Table 4.2](#). Crew position specific requirements are listed in [Table 5.1](#), [Table 6.1](#), [Table 7.1](#), [Table 8.1](#), [Table 9.1](#), [Table 10.1](#) and [Table 11.1](#) (T-2).

1.1.10. Will debrief the examinee's overall rating, specific deviations, area grades assigned (if other than qualified), and any required additional training, at a minimum. (T-3).

1.1.11. Should use all means available, to reconstruct, evaluate, and debrief the mission adequately.

#### 1.2. Examinees. Examinees:

1.2.1. Will accomplish required flight planning in accordance with the flight position assigned during the evaluation, furnishing FEs a copy of necessary mission data and mission materials, if appropriate. (T-2).

1.2.2. Will brief items for the mission flown, as required. (T-3).

1.2.3. The examinee will satisfactorily demonstrate the ability to perform required duties safely and effectively, including the operation of appropriate aircraft systems in accordance with applicable technical orders, instructions, and directives. **(T-2).**

## Chapter 2

### GENERAL EVALUATION GUIDELINES

#### 2.1. General.

2.1.1. All evaluations fall under the Qualification (QUAL), Instrument (INSTM), Mission (MSN), Instructor (INSTR) or SPOT categories listed in AFI 11-202V2, as supplemented.

2.1.2. Evaluations may be conducted on operational sorties and/or when Tactical Control has been transferred to another command (e.g., United States Air Forces in Europe/Pacific Air Forces) outside of ACC. Any evaluation paperwork will be routed through the home-station ACC Squadron (e.g., 38 RS / 97 IS) and 55th Operations Group (OG) for processing. **(T-2).**

#### 2.2. Evaluation Procedures.

2.2.1. Each chapter in this AFMAN contains a table of evaluation requirements for various positions and profiles. To complete an evaluation, all areas annotated with an “R” will be successfully completed. **(T-2).** The “notes” column of each table may include a number which refers to a note shown below the table.

2.2.2. Unit flight examiners may give evaluations outside of their organization to include administering evaluations between ACC and ANG or AFR Command.

2.2.3. 55th OG Standardization and Evaluation (OGV) can administer crewmember evaluations in any squadron, in accordance with AFI 11-202V2, to include 338 CTS syllabus evaluations. OGV evaluators will complete the Faculty Training Course prior to conducting 338 CTS syllabus evaluations. **(T-3).**

2.2.4. Momentary deviations from tolerances should not be considered in the grading, provided the examinee applies prompt corrective action and such deviations do not jeopardize flight safety. Consider cumulative deviations when determining the overall grade. Consider deviations incurred while employing the “see and avoid” concept as momentary deviations. The FE states the examinee’s overall rating, thoroughly critique specific deviations, area grades assigned and assign any required additional training.

#### 2.3. General Evaluation Guidance.

2.3.1. Qualification Evaluations. Qualification evaluation ensures that individuals are capable of using the equipment and possess the skills necessary to execute required actions on the aircraft and safely accomplish the mission.

2.3.2. Mission Evaluation. IAW AFI 11-202V2, the requirement for a separate MSN evaluation is waived. All QUAL evaluations will contain a mission scenario. **(T-3).** The scenario should be incorporated throughout the flight/ATD portion of the evaluation as much as possible. For aircrew qualified in multiple missions, recurring evaluations need only evaluate the primary mission events as long as currency is maintained in all other required training events.

##### 2.3.3. Certifications.

2.3.3.1. Mission Certifications. Mission certifications ensure that individuals are capable of performing duties essential to the effective employment of the aircraft. Mission



certifications are accomplished in accordance with local training requirements and/or squadron commander directions. Mission certification flight events are normally performed during QUAL evaluations, but may be performed on any flight or ATD with an instructor certified in that mission.

2.3.3.2. Multiple Certifications. When authorized by the OG Commander (OG/CC) in accordance with AFMAN 11-2RC-135V1, *RC/OC/WC/TC-135—Aircrew Training*, to establish or maintain certifications in more than one -135 model, use the following guidance. To add an additional -135 model (RC/OC/WC), accomplish a separate certification for that model. Some model transitions may require a difference evaluation. To initially mission certify in more than one -135 model, or for recurring evaluations of pilots mission certified in more than one -135 model, complete flight evaluation in accordance with AFI 11-202V2. Ensure qualification examination(s) and EPE(s) cover all applicable models and mission requirements.

2.3.4. Instrument Evaluations. Instrument evaluations apply to pilots. See [Chapter 5](#) of this volume for specific requirements. General instrument procedures should be evaluated in the ATD in conjunction with the EPE.

2.3.5. Qualification Evaluations. These evaluations should be combined with instrument evaluations, as applicable for the crew position.

2.3.6. No-Notice Evaluations. Conduct no-notice evaluations in accordance with with AFI 11-202V2, AFI 11-202V2 ACC Supplement (ACCSUP), *Aircrew Standardization and Evaluation Program* and AFI 11-202V2 ACCSUP1 55 OG Supplement (OGSUP1), *55th Operations Group Aircrew Standardization and Evaluation Program*.

2.3.7. Difference Evaluations.

2.3.7.1. Difference evaluations allow an individual to qualify in the same crew position in a similar Mission Design Series (MDS) or in a new or different crew position within the same MDS. Difference evaluations do not update expiration dates. List difference evaluations that do not update an eligibility zone as “SPOT” on the front of the AF Form 8 and explained as a difference evaluation under “Mission Description”. These evaluations may be used to qualify crewmembers in a different system/tactic (e.g., baseline or avionic upgrades) within the same MDS. In addition they may be used to qualify mission crew personnel already qualified in one crew position in a subsequent crew position within the same MDS and crew specialty.

2.3.7.1.1. Ground Phase Requisites. Qualification Examination (closed book).

2.3.7.1.2. Flight/ATD Phase. The requirement for a flight or ATD evaluation is determined by OG/CC in accordance with AFMAN 11-2RC-135V1. **(T-3)**.

2.3.7.2. The OG/CC determines whether a difference evaluation or certification is required after difference training. Specific instances requiring a difference evaluation is in each position specific evaluation criteria chapter and AFMAN 11-2RC-135V1.

2.3.8. Qualification in more than one C-135 aircraft does not require MAJCOM/A3 authorization. All -135s are considered the same MDS for basic qualification purposes. However, crewmembers flying multiple models (e.g., RC-135 V/W, RC-135S, and RC-135U

or WC-135 and OC-135) may need to obtain qualifications or certifications in the various models depending on the requirements listed in this AFMAN and AFMAN 11-2RC-135V1.

#### 2.3.9. Instructor Evaluations.

2.3.9.1. Initial instructor flight evaluations should be conducted with a student occupying the applicable aircrew position whenever possible.

2.3.9.2. The instructor monitors all phases of flight from an advantageous position and be prepared to demonstrate or explain any area or procedure. The FE focuses on the instructor's ability to recognize student difficulties and provide effective, timely corrective action.

2.3.9.3. The FE also evaluates any student grade assigned and Training Accomplishment and Progress Report completion on initial instructor checks.

2.3.9.4. The student performs those duties prescribed by the instructor for the sortie being accomplished. If an actual student is not available, the FE identifies to the examinee (prior to the mission) the level of performance to be expected from the FE acting as the student. If this option is utilized, at least one event or briefing should be instructed.

#### 2.3.10. Senior Staff Officer (SSO) Evaluations.

2.3.10.1. For evaluations of members in the SSO training program, annotate the crew position on the AF Form 8 as either FP (for a pilot), FN (for a navigator), FE (for an Electronic Warfare Officer (EWO)), or FA (for an Information Integration Officer (IIO)) in accordance with AFI 11-401\_ACCSUP\_I, *Aviation Management*.

2.3.10.2. Add the following restriction in the remarks section of the AF Form 8: "RESTRICTION. This evaluation permits operating the aircraft from the primary crew position only under direct supervision of an instructor (fill in appropriate crew position)."

2.3.10.3. Check the crew position tables in subsequent chapters for areas exempt from evaluation.

## Chapter 3

### GROUND PHASE REQUISITES

**3.1. General.** Ground requirements for INSTM, QUAL and MSN evaluations are listed in this chapter. Flight requirements are in position specific chapters.

**3.2. Ground Phase Requisites.** Requirements listed in [Table 3.1](#) are common to all crew positions and are accomplished in accordance with AFI 11-202V2, as supplemented, and according to unit directives. These should be accomplished prior to the flight phase.

3.2.1. Publications Check. The publications check is a requisite to all qualification evaluations, and is annotated in the comments block of the AF Form 8 only if unsatisfactory. The examinee will bring all required checklists. **(T-2).**

**Table 3.1. Crew Position Specific Requisites.**

Test Type	Pilot		Navigator	EWO/HO/*CMC/ASE/SMT
	QUAL	INSTM	QUAL	QUAL
OPEN BOOK <sup>1</sup>	R		R	R
CLOSED BOOK <sup>1</sup>	R		R	R
Instrument		R	R	
EPE	R		R	R
BOLDFACE	R			
<b>Notes:</b> 1. This exam consists of questions derived from applicable flight manuals and governing directives. OG/OGV determines the necessary number of questions to be included for each MDS and crew position.  *CMC refers to Cryptologic Mission Crew.  “R” refers to required evaluation areas.				

3.2.2. EPE. Every qualification evaluation which updates an expiration date includes an EPE. For pilots, the FE administers the EPE in the ATD or conducts a tabletop exercise and documents the method of EPE accomplishment in the comments block of the AF Form 8. For navigators, the EPE should be accomplished verbally. For all other crewmembers, accomplish an EPE verbally and use emergency procedures grading criteria to evaluate this event. Units can determine scenarios for EPEs. The FE assigns an overall EPE grade (1 or 3) in the qualification ground phase block of the AF Form 8.

## Chapter 4

### GENERAL GRADING INSTRUCTIONS AND AREAS

**4.1. Grading Instructions and General Grading Criteria.** Standards and performance parameters are contained in AFI 11-202V2 and this manual. A three-level grading system (Q, Q-, and U) is used for most areas; however, a "Q-" grade will not be indicated under critical areas. **(T-2).**

4.1.1. Critical Areas. Critical areas are events that require adequate accomplishment by the examinee in order to successfully achieve the sortie objectives and complete the evaluation. If an examinee receives a "U" grade in any critical area, the overall grade for the evaluation is "Q3." Critical areas are identified by "(CRITICAL)" following the applicable area title.

4.1.2. Non-critical Areas. If an examinee receives a "U" grade in a non-critical area then the overall grade awarded can be no higher than "Q2." An examinee receiving a "Q-" grade in a non-critical area or areas may still receive a "Q1" overall grade at evaluator discretion. An overall "Q3" may be awarded if, in the judgment of the flight examiner, there is justification based on performance in one or several areas or sub-areas.

4.1.3. The FE should exercise judgment when the wording of areas is subjective and when specific situations are not covered.

4.1.4. Evaluator judgment is the final determining factor in deciding the overall qualification level. **(T-2).**

4.1.5. The "Area" number column under grading areas is derived from an ACC/A3TV consolidated list to track trends in the Combat Air Force.

**4.2. General Grading Criteria. Table 4.1.** lists general areas to be evaluated for all applicable evaluations. The following general qualification criteria are common to all crew positions and will be used for all applicable evaluations. **(T-2).**

**Table 4.1. General Grading Areas (All Crew Positions).**

Area	DESCRIPTION	NOTES
1	Mission Planning	
28	Post-flight/Debrief	
29	Equipment/Publications	
30	Airmanship (CRITICAL)	
31	Safety (CRITICAL)	
32	Aircrew Discipline (CRITICAL)	
37	Crew Resource Management (CRM)/Crew Coordination	
50	Communications, Logs, and Reports	1
52	Emergency Procedures	
302	Checklist Procedures	
<b>Notes:</b>		
1. Not required for Navigator, EWO, and IIO SSOs.		

#### 4.2.1. Area 1, Mission Planning.

4.2.1.1. **Q.** Developed a plan considering mission objectives, specific action points, and aircraft/ crew capabilities. Complied with procedures prescribed by the flight manual and other applicable directives. Met all flight requirements, complied with local directives and participated in all required briefings. Mission planning was adequate with no more than minor omissions, deviations or errors which did not impact planned sortie success.

4.2.1.2. **Q-.** As above, but did not fully comply with directives. Omissions, deviations or errors detracted from planned sortie execution.

4.2.1.3. **U.** Failed to check Flight Crew Information File, Vol 1, Part B and/or annotate correctly. Failed to comply with local directives or participate in all required briefings. Mission planning was inadequate.

**4.2.2. Area 28, Post-flight/Debrief.**

4.2.2.1. **Q.** Satisfactory knowledge and performance of required procedures. Attended and fully participated in required debrief(s). Ensured required paperwork was completed and satisfactorily debriefed with required personnel.

4.2.2.2. **Q-.** Incomplete knowledge of required procedures. Attended/participated in required debrief(s), but hesitant to make appropriate inputs. Required paperwork entries and required debriefing(s) were not complete or thorough.

4.2.2.3. **U.** Unsatisfactory knowledge of required procedures. Major deviations in procedures. Failed to attend or participate in required debrief(s). Failed to complete or ensure completion of required paperwork and debrief(s).

**4.2.3. Area 29, Equipment/Publications. Note:** Crewmembers should not be accountable for technical difficulties that prevent Electronic Flight Bag (EFB) syncing. A backup or shared EFB may be utilized in this instance.

4.2.3.1. **Q.** Possessed all required personal/professional equipment and publications (paper and/or EFB). Maintained equipment in serviceable condition. Publications are current and properly posted according to directives (N/A EFB).

4.2.3.2. **Q-.** Possessed all required personal/professional equipment and publications. Maintained equipment in serviceable condition. Paper publications are current but posted with omissions, deviations, or errors.

4.2.3.3. **U.** Failed to possess personal/professional equipment or to maintain equipment in serviceable condition. Required publications are not current, or paper copies were posted with major omissions, deviations, or errors.

**4.2.4. Area 30, Airmanship (CRITICAL).**

4.2.4.1. **Q.** Executed the assigned mission in a timely, efficient manner. Conducted the flight with a sense of understanding and comprehension.

4.2.4.2. **U.** Decisions or lack thereof resulted in failure to accomplish the assigned mission.

**4.2.5. Area 31, Safety (CRITICAL).**

4.2.5.1. **Q.** Aware of and complied with all safety factors required for safe aircraft operation and mission accomplishment.

4.2.5.2. **U.** Was not aware or did not comply with all safety factors required for safe aircraft operation or mission accomplishment. Operated the aircraft in a dangerous manner. Demonstrated poor judgment to the extent that safety could have been compromised.

**4.2.6. Area 32, Aircrew Discipline (CRITICAL).**

4.2.6.1. **Q.** Demonstrated strict professional flight and aircrew discipline throughout all phases of the mission.

4.2.6.2. **U.** Failed to exhibit strict professional flight or aircrew discipline. Violated or ignored rules or instructions.

**4.2.7. Area 37, Crew Resource Management/Crew Coordination.**

4.2.7.1. **Q.** Effectively coordinated with other aircrew members and/or ATD operator/evaluator. Demonstrated basic knowledge of other crewmembers' duties and responsibilities. Provided timely direction or information, as required, which clarified/rectified a situation. Efficiently used available resources to manage workload.

4.2.7.2. **Q-.** Adequate coordination with other aircrew members, but demonstrated limited knowledge of other crewmembers' basic duties/responsibilities. Showed some hesitation to provide timely direction/information which would have clarified confusion or rectified a situation. Used a limited number of available resources to manage workload.

4.2.7.3. **U.** Coordination with other aircrew members and lack of knowledge of their duties/responsibilities were detrimental to flight safety or mission effectiveness. Did not provide timely direction/information which would have clarified/rectified a situation. Did not use any available resources to manage workload.

**4.2.8. Area 50, Communications, Logs, and Reports.**

4.2.8.1. **Q.** Communicated required information within the aircraft/ATD and with external agencies, if applicable. Communications were clear, concise, timely, and used standard terminology/format. All logs, reports, media and forms required were completed in accordance with applicable directives, tasking and policy. Information was provided in sufficient detail to allow accurate and timely analysis of associated data. Complied with security procedures.

4.2.8.2. **Q-.** As above but with minor deviations, omissions or errors which did not significantly impact the planned mission. Complied with security procedures.

4.2.8.3. **U.** Major deviations, omissions or errors which significantly impacted the planned mission. Communications caused confusion or delay. Logs, reports, media or forms required contained errors or omissions precluding analysis of mission data. Failed to comply with security procedures.

**4.2.9. Area 52, Emergency Procedures** (This area may be evaluated verbally).

4.2.9.1. **Q.** Satisfactory systems/procedural knowledge. Recognized actual/simulated malfunctions and applied corrective action. Accomplished all required checklists/flight manual actions and/or effectively used available aids. Performed and/or explained proper corrective action for each type of malfunction in the proper sequence. Effectively coordinated emergency actions with other crewmembers without delay or confusion.

4.2.9.2. **Q-** Marginal systems/procedural knowledge. Slow to recognized actual/simulated malfunctions or apply corrective action. Did not effectively use checklists/flight manual and/or available aids. Performed and/or explained proper corrective action for each type of malfunction in the proper sequence but with minor errors, deviations, or delays. Slow or hesitant to coordinate emergency actions with other crewmembers.

4.2.9.3. **U.** Unsatisfactory systems/procedural knowledge. Failed to recognize actual/simulated malfunctions or apply corrective action. Failed to accomplish required checklists/flight manual actions and/or unable to locate information in available aids. Did not perform and/or explain proper corrective action for each type of malfunction in the proper sequence. Improperly or ineffectively coordinated emergency actions with other crewmembers causing delay or confusion.

#### 4.2.10. **Area 302, Checklist Procedures.**

4.2.10.1. **Q.** Checklist items and procedures required by the flight manual and applicable directives were accomplished in a thorough and proficient manner with deviations or errors which did not impact sortie success.

4.2.10.2. **Q-** Checklist items and procedures required by the flight manual and applicable directives were accomplished with minor omissions/deviations/errors.

4.2.10.3. **U.** Checklist items and procedures required by the flight manual and applicable directives were accomplished with major omissions/deviations/errors.

**4.3. Instructor Grading Criteria.** Table 4.2 lists areas to be evaluated for all instructor evaluations. Awarding a "U" in any of the Instructor Grading Criteria areas results in a Q3 for the overall instructor grade. The overall grade for the instructor portion of the evaluation will be no higher than the lowest overall grade awarded under QUAL/INSTM. The following qualification criteria are common to all crew positions and will be used for all instructor evaluations. **(T-2).**

**Table 4.2. Instructor Grading Areas.**

Area	DESCRIPTION
33	Instructional Ability
47	Briefings/Critique
56	Demonstration and Performance
1001	Reserved

#### 4.3.1. **Area 33, Instructional Ability.**

4.3.1.1. **Q.** Demonstrated ability to communicate effectively. Provided appropriate corrective guidance when necessary. Planned ahead and made timely decisions. Correctly analyzed student errors.

4.3.1.2. **Q-** Minor discrepancies in the above criteria that did not adversely impact student progress.

4.3.1.3. **U.** Unable to effectively communicate with the student. Did not provide corrective action where necessary. Did not plan ahead or anticipate student problems. Incorrectly analyzed student errors. Adversely impacted student progress.

**4.3.2. Area 47, Briefings/Critique.**

4.3.2.1. **Q.** Briefings were well organized, accurate, and thorough. Reviewed student's present level of training and defined mission events to be performed. Demonstrated ability during critique to reconstruct the flight, offer mission analysis, and provide corrective guidance where appropriate. Completed all training documents according to prescribed directives. Awarded appropriate grades.

4.3.2.2. **Q-.** As above but with minor errors or omissions in briefings, critique, or training documents that did not adversely impact student progress.

4.3.2.3. **U.** Briefings were marginal or nonexistent. Did not review student's training folder or past performance. Failed to adequately critique student or conducted an incomplete mission analysis which compromised learning. Student strengths or weaknesses were not identified. Adversely impacted student progress. Awarded inappropriate grades. Overlooked or omitted major discrepancies.

**4.3.3. Area 56, Demonstration and Performance.**

4.3.3.1. **Q.** Effectively demonstrated procedures and techniques on the ground and in-flight/ATD, as required. Demonstrated thorough knowledge of aircraft systems, procedures, and all applicable publications and regulations.

4.3.3.2. **Q-.** Minor discrepancies in the above criteria that did not adversely impact student progress.

4.3.3.3. **U.** Did not demonstrate correct procedure or technique. Insufficient depth of knowledge about aircraft systems, procedures, or proper source material. Adversely impacted student progress.



## Chapter 5

### PILOT EVALUATIONS

**5.1. General.** Grading criteria contained herein cannot cover every situation. Written parameters should be tempered with sortie objectives, evaluator judgment, and task accomplishment in the determination of overall aircrew performance. Specific requirements for each evaluation are as follows:

#### **5.2. Qualification Evaluations.**

5.2.1. Ground Phase Requisites. See [Table 3.1](#)

5.2.2. Flight Phase. All areas required in [Table 5.1](#) under AC (Aircraft Commander) qualification or PQ (Pilot qualification) will be evaluated, unless not applicable to the specific aircraft as noted. **(T-2)**. Any approach work (**Exception:** Area 25, Landing) not completed on the scheduled sortie may be completed in the ATD (if available).

5.2.3. Copilots initially upgrading to aircraft commander will have a qualified Instructor Pilot (IP) (desired) or FE (secondary) in the copilot's position during critical phases of flight. **(T-2)**.

5.2.4. Qualification in either F108 or TF-33 aircraft will be initiated by initial qualification in one engine type, followed by a difference evaluation in the other. **(T-3)**. Subsequent annual qualification evaluation in one engine type satisfies requirements for both types of aircraft, provided ground testing encompasses both aircraft types and the individual is current in both engine types.

**5.3. Mission Certifications.** For aircraft commanders mission certifying in a model with reversers, evaluate reverse thrust landings in a reverse thrust equipped aircraft for initial qualification evaluations.

#### **5.4. Instrument Evaluations.**

5.4.1. Ground Phase Requisites. Instrument Examination.

5.4.2. Flight Phase. All areas required in [Table 5.1](#) under "INSTM" will be evaluated. **(T-2)**.

#### **5.5. Difference Evaluations.**

5.5.1. Ground Phase Requisites. Closed Book exam with Boldface. Pilots transitioning from the KC-135 or 707 series aircraft models to a C-135 require an Open Book, Closed Book, Boldface, and EPE. The EPE should emphasize the difference between models.

5.5.2. Flight Phase. Required transitions are in accordance with AFMAN 11-2RC-135V1. Evaluate applicable items in [Table 5.2](#) The following transitions also require a flight evaluation:

5.5.2.1. Transition from non-reverser equipped aircraft to an aircraft model with thrust reversers. Flight phase for thrust reverser engines transition consists of landing (reverse thrust) and simulated engine out pattern/landing (reverse thrust) (AC/IP only).

5.5.2.2. Pilots not qualified in receiver air refueling (AR) who seek qualification for receiver AR. Flight phase for AR transition consists of AR/Receiver.

5.5.3. Combining Periodic and Difference Evaluations. Qualified IPs may update their periodic qualification concurrent with a difference evaluation provided all requirements for the periodic and difference evaluations are satisfied. A combined evaluation should not be accomplished for non-instructor pilots.

**5.6. Instructor Evaluations.** Pilots receiving initial instructor evaluations will occupy the right seat for evaluation of takeoff, AR, initial buffet (ATD only), and all traffic pattern activity. **(T-3).** An IP or FE will occupy the left seat. **(T-3).** On recurring checks, instructors may occupy either seat to accomplish required items in [Table 5.1](#) A student, pilot, copilot, IP, or FE may occupy the opposite pilot position. Evaluate all instructor areas. In all cases, the examinee occupies the position normally required to instruct, and performs all tasks as demonstration items.

5.6.1. Instructor examinees accomplish the following demonstrations:

5.6.1.1. AR envelope demonstration.

5.6.1.2. Approach to initial buffet (initial C-135 instructors only; accomplish only in ATD).

5.6.1.3. 30 flap landing.

5.6.1.4. Touch and go landing. Instructor examinees perform touch and go landings as both pilot flying and pilot monitoring.

5.6.2. Grade demonstrations using the criteria for Area 56. Grade AR envelope demonstration using Area 17. Grade 30 Flap landing/Touch and Go landings using Area 25 and Area 75.

5.6.3. Instructor Requalification Evaluations. Follow guidance for recurring instructor evaluations, in accordance with AFMAN 11-2RC-135V1 and AFI 11-202V2.

## **5.7. EPE, additional guidance.**

5.7.1. Qualification EPEs evaluate the pilot's performance of all boldface procedures, a cross section of noncritical emergency procedures, and knowledge and performance of general systems operation. At a minimum, evaluate all boldface/critical action items.

5.7.2. Evaluate Engine Failure during Takeoff or Climb-Out After Takeoff for AC or IP examinees during the EPE (RC).

5.7.3. Evaluate Alert Start (RC) or Cartridge Start (OC/WC) during all EPEs.

5.7.4. If the EPE is being conducted in conjunction with an INSTM evaluation the following should be included (pilots qualified in the OC/WC only may accomplish "Operational Flight Trainer (OFT) only" events verbally).

5.7.4.1. Unusual Attitudes (OFT only).

5.7.4.2. Holding.

5.7.4.3. General instrument procedures and non-critical instrument malfunctions.

5.7.4.4. Low visibility approach and landing [ceiling/visibility  $\leq$  500/2] (OFT only).

5.7.4.5. Instrument approach with missed approach [ceiling/visibility below minimums] (OFT only).

## **5.8. Pilot Evaluation Requirements.**

5.8.1. **Table 5.1** lists areas for pilot or copilot qualification, instrument, and instructor evaluations. (AC=Aircraft Commander Qual, PQ=Pilot Qual).

5.8.2. **Table 5.2** lists areas for pilot or copilot difference flight evaluations and mission evaluations.

**Table 5.1. Pilot Evaluation Requirements.**

Area	DESCRIPTION	NOTES	AC	PQ	INSTM
2	Briefings		R		
3	Pre-Takeoff		R	R	
4	Takeoff		R	R	
6	Departure/Climb (Instrument Flight Rules (IFR)/Visual Flight Rules (VFR))		R	R	
8	Cruise/Navigation		R	R	
10	In-Flight Checks		R	R	
12	Air Traffic Control (ATC) Communications/Identification Friend or Foe/ Selective Identification Feature (IFF/SIF)		R	R	
15	Unusual Attitudes				R
17	Air Refueling	1, 4	R	R	
18	Descent (Enroute or Published)		R	R	
19	Go Around		R	R	
23	VFR Traffic Pattern		R	R	
25	Landing	2	R	R	
26	After Landing		R	R	
29	Systems Knowledge/Operation		R	R	
54	Emergency Procedures—Boldface (Critical)		R	R	
61	Holding				R
63	IFR Pattern (prior to Final Approach Fix (FAF))				R
64	Non-Precision Approach (FAF-Missed Approach Point (MAP))	3, 4			R
65	Precision Approach (Glide Path-Decision Altitude (DA))	5			R
67	Missed Approach				R
70	Simulated Engine Out Pattern/Landing	4	R		
74	Simulated Engine Out Go-Around	2	R		
75	Touch and Go Landings		R	R	

465	Engine Failure During Takeoff or Climbout After Takeoff	2	R		
1002-1007	Reserved				
<p><b>Notes:</b></p> <ol style="list-style-type: none"> <li>1. Includes practice emergency separations. Non-instructor aircraft commander qualification evaluations can be completed without AR qualification at OG/CC discretion. AC/IP will complete an inflight refueling SPOT evaluation if not accomplished during the initial MSN QUAL. <b>(T-3).</b></li> <li>2. Include reverse thrust evaluation (if equipped). If not equipped, evaluation of a reverse thrust landing may be accomplished verbally resulting in a complete evaluation with no restrictions. During recurring evaluations for aircraft commanders, a right seat approach and landing is required.</li> <li>3. Tactical air navigation system (TACAN), Localizer/VHF omni-directional radio range (VOR), air surveillance radar (ASR), lateral navigation (LNAV) or non-directional beacon (NDB) (if installed).</li> <li>4. Not required for SSOs.</li> <li>5. Instrument Landing System (ILS), Precision Approach Radar (PAR) or approach with vertical guidance (APV) (localizer performance with vertical guidance (LPV), LNAV/vertical navigation (VNAV), localizer type directional aid (LDA) with glide slope)</li> </ol> <p>“R” refers to required evaluation areas.</p>					

**Table 5.2. Difference Evaluation Requirements.**

Area	DESCRIPTION	NOTES	C-135
2	Briefings		R
3	Pre-Takeoff		R
4	Takeoff		R
6	Departure/Climb		R
8	Cruise/Navigation		R
10	In-Flight Checks		R
12	ATC Communications/IFF/SIF		R
18	Descent		R
25	Landing	8	R
26	After Landing		R
29	Systems Knowledge/Operation		R
54	Emergency Procedures-Boldface (Critical)		R
63	IFR Pattern		R
67	Missed Approach		R
70	Simulated Engine Out Pattern/landing	7	R
74	Simulated Engine Out Go-Around	7	R
75	Touch and Go Landing		R

465	Engine Failure During Takeoff or Climbout After Takeoff		R
746	Combat Sent Duties	1, 6	
747	Cobra Ball Duties	2, 6	
748	Rivet Joint Duties	3, 6	
749	Open Skies Duties	4, 6	
753	Constant Phoenix Duties	5, 6	
1008-1013	Reserved		

**Notes:**

1. Required only for Combat Sent MSN certification.
2. Required only for Cobra Ball MSN certification.
3. Required for Rivet Joint MSN certification.
4. Required only for Open Skies MSN certification.
5. Required only for Constant Phoenix MSN certification.
6. The mission event flown on QUAL evaluations should be the one flown on the individual's primary aircraft or ATD and is not required unless certifying in a mission.
7. AC/IP only
8. OC/WC include reverse thrust landing.

“R” refers to required evaluation areas.

**5.9. General Grading Criteria.** For grading general areas, see [Chapter 4](#). For all evaluations, the FE will disregard minor deviations from tolerances for the purpose of clearing conflicting traffic provided the examinee initiates timely corrective action. **(T-2)**. When Visual Meteorological Conditions, see and avoid responsibilities are paramount. Apply the general criteria from [Table 5.3](#) during all phases of flight except as noted for specific events:

**Table 5.3. General Pilot Grading Criteria.**

<b>Q</b>	Altitude	+/- 200 feet
	Airspeed	+/- 20 Kts
	MACH Speed	+/- .03
	Heading (when assigned or as specified)	+/- 5 degrees
	Course (fix to fix)	3 Nautical Miles (NM)
	TACAN Arc	+/- 2 NM
<b>Q-</b>	Altitude	+/- 300 feet
	Airspeed	+/- 25 Kts
	MACH Speed	+/- .04
	Heading (when assigned or as specified)	+/- 10 degrees
	Course (fix to fix)	5 NM
	TACAN Arc	+/- 3 NM
<b>U</b>	All	Exceeded Q- Limits

**5.10. Specific Grading Criteria.****5.10.1. Area 2, Briefings.**

5.10.1.1. **Q.** Briefings were well organized and presented effectively in a logical sequence. Covered all pertinent items according to applicable AFIs, Flight Manuals, Flight Information Publications, Foreign Clearance Guide, and/or other directives. Effectively used available briefing aids.

5.10.1.2. **Q-.** Briefings lacked continuity or contained unnecessary repetition. Some difficulty communicating thoughts clearly. Did not make effective use of available briefing aids. Dwelled on non-essential items.

5.10.1.3. **U.** Failed to use briefing aids. Omitted essential items. Demonstrated lack of knowledge of subject. Briefing was poorly organized and not presented in logical sequence, resulting in confusion. Presented erroneous information which would affect safe/effective mission accomplishment.

**5.10.2. Area 3, Pre-Takeoff.**

5.10.2.1. **Q.** Performed all required procedures, calculations, and coordination prior to takeoff according to flight manuals and applicable directives. Accurately determined aircraft's readiness for flight. Computed required airspeeds within +/-3 knots, critical field length, takeoff and/or landing distances within +/- 500 feet, Engine Pressure Ratio (EPR)/N1 within +/- .02/1 %, stabilizer trim setting within +/- .5, and % Mean Aerodynamic Chord (MAC) for takeoff within +/- 1%. Taxi speeds appropriate for conditions. Visually cleared area.

5.10.2.2. **Q-** . Same as above except for minor procedural deviations which would not detract from mission effectiveness. Accurately determined aircraft's readiness for flight. Computed airspeeds within +/- 5 knots, critical field length, takeoff and/or landing distances within +/- 800 feet, EPR/N1 within .03/1.5%, stabilizer setting within +/- 1.0, and % MAC for takeoff within +/- 1.5%. Limited knowledge of performance data and aircraft weight and balance. Taxi speeds appropriate for conditions. Visually cleared area.

5.10.2.3. **U** . Omitted major item(s). Major deviation in procedures. Failed to accurately determine aircraft's readiness for flight. Take Off and Landing Data computations exceeded Q- criteria. Inadequate knowledge of performance data and aircraft weight and balance. Taxi speeds inappropriate for conditions. Did not adequately clear area.

#### 5.10.3. **Area 4, Takeoff.**

5.10.3.1. **Q** . Smooth, positive aircraft control throughout takeoff. Performed according to flight manual procedures.

5.10.3.2. **Q-** . Minor deviations from published procedures not affecting safety of flight. Control rough or erratic. Hesitant in application of corrections.

5.10.3.3. **U** . Liftoff potentially dangerous. Exceeded aircraft/systems limitations. Failed to establish proper climb attitude. Marginal control of the aircraft. Violated flight manual procedures.

#### 5.10.4. **Area 6, Departure/Climb (IFR/VFR).** Airspeed "+" tolerances do not apply unless assigned/restricted by ATC/tech data. Examinee did not exceed placard speeds.

5.10.4.1. **Q** . Performed departure as published/directed and complied with all restrictions. Applied headings/course corrections promptly. Airspeed +/- 10 Kts.

5.10.4.2. **Q-** . Performed departure as published/directed and complied with all restrictions. Slow to apply headings/course corrections. Airspeed +/- 15 Kts.

5.10.4.3. **U** . Failed to comply with published/directed departure instructions or exceeded Q- criteria. Failed to maintain positive rate of climb.

#### 5.10.5. **Area 8, Cruise/Navigation.**

5.10.5.1. **Q** . Leveled off smoothly. Established proper cruise airspeed promptly. Properly used appropriate navigation equipment/procedures. Ensured nav aids were properly tuned, identified, and monitored. Aware of exact position at all times. Visually cleared the area. Maintained/adjusted speeds as required to meet mission timing.

5.10.5.2. **Q-** . Level off erratic. Slow in establishing proper cruise airspeed. Minor errors in procedure/use of navigation equipment. Some deviations in tuning, identifying, and monitoring nav aids. Slow to comply with clearance instructions. Had some difficulty in establishing exact position and maintaining/ adjusting speed to meet mission requirements. Visually cleared the area.

5.10.5.3. **U** . Level off erratic, exceeded Q- criteria. Excessive delay or failed to establish proper cruise airspeed. Major errors in procedures/use of navigation equipment to the extent that position was unreliable. Did not maintain/adjust speed to meet mission requirements. Did not visually clear the area.

**5.10.6. Area 10, In-Flight Checks.**

5.10.6.1. **Q** . Adhered to briefed/directed minimum fuel requirements/performed in-flight checks as required. Satisfactorily managed/monitored fuel and other systems.

5.10.6.2. **Q-** . Deviations or omissions during checks did not detract from mission accomplishment.

5.10.6.3. **U** . Did not adhere to minimum fuel requirements, perform in-flight checks, or monitor systems to the degree that an emergency condition could develop if allowed to continue uncorrected.

**5.10.7. Area 12, ATC Communications/IFF/SIF.**

5.10.7.1. **Q** . Complete knowledge of and compliance with correct procedures. Transmissions concise with proper terminology. Complied with and acknowledged all required instructions. Understood clearances and complied with controlling agency instructions. Correctly operated equipment.

5.10.7.2. **Q-** . Occasional deviations from correct procedures that required re-transmissions. Slow in initiating required actions. Transmissions contained extraneous information, were not in proper sequence, non-standard terminology. Understood clearances. Complied with controlling agency instructions with minor errors or omission not affecting mission safety. Slow to comply with controlling agency instructions. Missed several radio calls from ATC. Minor errors, deviations, or omissions in operating equipment.

5.10.7.3. **U** . Incorrect procedures or poor performance caused confusion and reduced mission effectiveness. Omitted required checks or procedures. Erroneous IFF/SIF codes used. Did not understand clearance or accepted clearance that could not be complied with. Did not read back clearance accurately (when required). Did not comply with clearance. Did not make required reports. Major errors, deviations, or omissions in operating equipment.

**5.10.8. Area 15, Unusual Attitudes.**

5.10.8.1. **Q** . Smooth positive recovery to level flight, correct recovery procedures used, or demonstrated satisfactory knowledge of correct procedures.

5.10.8.2. **Q-** . Slow to analyze attitude, or erratic in recovery to level flight correct recovery procedures followed.

5.10.8.3. **U** . Unable to determine attitude, or improper recovery procedures.

**5.10.9. Area 17, Air Refueling. Note:** Copilots will be evaluated on performance of duties during rendezvous and refueling operations including fuel panel operations and checklist procedures. **(T-3).** Copilot AR checks may be completed in the ATD or an aircraft on the ground if unable to complete during flight. AR track time should be scheduled to allow a minimum of 30 minutes contact time. Unit Standardization and Evaluation (Stan/Eval) may establish a maximum amount of time from initial pre-contact to achieve required contact time. For instructor pilots performing an AR limits demonstration, inadvertent disconnects are permissible during demonstration and therefore should not be counted against the examinee.



5.10.9.1. **Q** . Instructors and Aircraft Commanders. Continuous contact for 15 minutes for initial qualification, no more than 3 inadvertent disconnects. Continuous contact for 10 minutes with not more than 3 inadvertent disconnects for recurring evaluations (may be reduced to 5 minutes for instructor evaluations.) Used correct procedures during emergency separation. Copilots. Preplanned target fuel distribution and on-load to remain within aircraft weight/center of gravity (CG) limits. Correctly configured the aircraft for refueling. Operated fuel panel during refueling to achieve desired on-load in accordance with planned or recalculated distribution. Provided appropriate back up to aircraft commander. Used correct procedures during emergency separation.

5.10.9.1.1. Airspeed +/- 10 Kts (1/2 mile).

5.10.9.1.2. Altitude +/- 200 ft (1 mile) - 300 ft to +100 ft (1 mile to 1/2 mile).

5.10.9.1.3. **(IP Only)** Limits were conducted within smooth inputs and the instructor provided adequate instruction of the references during the demo. All regulatory guidance was followed and limits were accomplished safely.

5.10.9.2. **Q-** . Instructors and Aircraft Commanders. Continuous contact for 15 minutes for initial qualification, more than 3 inadvertent disconnects. Continuous contact for 10 minutes with more than 3 inadvertent disconnects for recurring evaluations (may be reduced to 5 minutes for instructor evaluations.) Slow to recognize and apply needed corrections to establish and maintain proper refueling position. Aircraft control not always positive and smooth, but adequate. Accomplished procedures required by the flight manual and local directives with minor errors, deviations, and/or omissions. Minor errors, deviations, and/or omissions in emergency separation procedures. Copilots. Preplanned target fuel distribution and on-load to remain within aircraft weight/CG limits. Correctly configured the aircraft for refueling. Operated fuel panel during refueling to achieve desired on-load in accordance with planned or recalculated distribution. Provided minimal back up to aircraft commander. Minor errors, deviations or omissions in emergency separation procedures.

5.10.9.2.1. Airspeed +/- 15 Kts (1/2 mile).

5.10.9.2.2. Altitude +/- 300 ft (1 mile) -300 ft to +200 ft (1 mile to 1/2 mile).

5.10.9.2.3. **(IP Only)** Limits were conducted with smooth inputs with little or no instruction given. All regulatory guidance was followed and limits were accomplished safely.

5.10.9.3. **U** . Instructors and Aircraft Commanders. Erratic or dangerous in the refueling position. Errors/deviations/omissions that affected flight safety and/or the successful completion of AR. Exceeded the Q- criteria. Major errors, deviations, or omissions in aerial refueling procedures including limits (IP only) and practice separations. Copilots. Major errors, deviations, and/or omissions in configuring the aircraft for refueling. Did not calculate target fuel distribution and CG or exceeded Q- criteria. Exceeded or attempted to exceed operating/CG limits while operating fuel panel during refueling. Did not back up, or caused distraction of, the aircraft commander. Major errors, deviations, and/or omissions in procedures during emergency separation.

#### 5.10.10. **Area 18, Descent.**

5.10.10.1. **Q** . Performed descent as directed. Complied with all restrictions. Visually cleared the area. Complied with flight manual procedures and local directives. Computed required airspeeds within +/-3 knots, landing distances within +/- 500 feet, EPR/N1 within +/- .02/1 %. Airspeed +/- 10 Kts (if applicable).

5.10.10.2. **Q-** . Performed descent as directed with minor deviations. Visually cleared the area adequately. Slow to accomplish flight manual procedures and complied with local directives. Computed required air speeds within +/-5 knots, landing distances within +/- 800 feet, EPR/ N1 within +/- .03/1.5 %. Limited knowledge of performance data. Airspeed +/- 15 Kts (if applicable).

5.10.10.3. **U** . Performed descent with major deviations. Did not accomplish required checks. Failed to visually clear the area adequately. Major errors, deviations or omissions in landing data. Exceeded Q- criteria. Inadequate knowledge of performance data.

5.10.11. **Area 19, Go Around.** May be flown from any type of approach, IFR or VFR. May be combined with Area 24, Missed Approach. FE may direct a go-around at any point in an approach or landing to evaluate go-around procedures.

5.10.11.1. **Q** . Aircraft control was smooth and positive. Promptly established appropriate go around pitch and power settings. Performed procedures in accordance with the flight manual. Complied with pattern/maneuver and flap retraction speed limitations.

5.10.11.2. **Q-** . Slow to establish appropriate go around pitch and power settings. Minor errors/ deviations/omissions in flight manual procedures. Complied with pattern/maneuver and flap retraction speed limitations.

5.10.11.3. **U** . Rough or erratic aircraft control. Pitch and power settings were inappropriate. Major errors/deviations/omissions in flight manual procedures. Failed to comply with pattern/ maneuver and/or flap retraction speed limitations.

5.10.12. **Area 23, VFR Traffic Pattern.** May be graded using a rectangular pattern, overhead pattern, or a circling maneuver.

5.10.12.1. **Q** . Performed traffic patterns according to the flight manual, operational procedures, and directives. Aircraft control was positive and smooth. Effectively cleared ahead of flight-path. Airspeed + (Did not exceed Flap Placard)/-5 Kts.

5.10.12.2. **Q-** . Performed traffic patterns with minor deviations to procedures outlined in the flight manual, operational procedures, and directives. Aircraft control was not consistently positive and smooth, but safe. Adequately cleared area of intended flight. Airspeed + (Did not exceed Flap Placard)/-5 Kts.

5.10.12.3. **U** . Traffic patterns not performed according to procedures outlined in the flight manual, operational procedures, and directives. Erratic aircraft control. Did not clear area of intended flight. Exceeded Q- criteria.

5.10.13. **Area 25, Landing.**

5.10.13.1. **Q** . Performed landings according to procedures outlined in the flight manual, operational procedures, and directives. Correctly used thrust reversers, as applicable.

5.10.13.1.1. Threshold Speed: +10/-5 Kts.

5.10.13.1.2. Touchdown Point: +/- 1000 feet as compared to computed flare distance and within stopping distance for runway available.

5.10.13.1.3. Centerline: Touchdown +/- 15 feet of centerline.

5.10.13.2. **Q-** . Landings performed according to procedures outlined in the flight manual, but outside the tolerances listed in Q criteria. Touchdown within stopping distance for runway available.

5.10.13.3. **U** . Landings not performed according to procedures outlined in the flight manual, operational procedures, and directives. Exceeded Q- criteria.

**5.10.14. Area 26, After Landing.**

5.10.14.1. **Q** . Aircraft taxi procedures accomplished in accordance with the flight manual and applicable directives. Taxi speeds appropriate for conditions. Visually cleared area. Safely followed marshaller's instructions.

5.10.14.2. **Q-** . Same as Q except minor errors, deviations or omissions were noted in aircraft taxi procedures. Taxi speeds appropriate for conditions. Visually cleared area. Some confusion over marshaller's instructions.

5.10.14.3. **U** . Major errors, deviations or omissions were made in aircraft taxi procedures. Taxi speeds inappropriate for conditions. Failed to clear. Disregarded marshaller's instructions, or allowed marshaller to direct an unsafe situation.

**5.10.15. Area 29, Systems Knowledge Operation.**

5.10.15.1. **Q** . Satisfactory knowledge of systems ensuring effective operation within prescribed limits and diagnosis of problems. Explained proper corrective action for each type of malfunction. Effectively utilized publications and/or available aids.

5.10.15.2. **Q-** . Incomplete knowledge of system operating limits. Slow to analyze problems or take proper corrective action. Did not effectively use publications and/or available aids.

5.10.15.3. **U** . Unsatisfactory knowledge of systems. Unable to analyze problems or take corrective action. Did not use publications and/or available aids.

**5.10.16. Area 54, Emergency Procedures - Boldface (CRITICAL).**

5.10.16.1. **Q** . Correct responses. Maintained aircraft control. Coordinated proper actions.

5.10.16.2. **U** . Incorrect sequence, unsatisfactory response, or unsatisfactory performance of corrective action.

**5.10.17. Area 61, Holding.**

5.10.17.1. **Q** . Entry and holding procedures according to applicable directives. Airspeed +/- 15Kts.

5.10.17.2. **Q-** . Non-standard entry and holding procedures but remained within air space limits. Airspeed +/- 20 Kts.

5.10.17.3. **U** . Exceeded holding airspace limits or Q- criteria.

**5.10.18. Area 63, IFR Pattern (prior to FAF).**

5.10.18.1. **Q** . Procedures required by the flight manual and applicable directives were accomplished. Followed controller's instructions and complied with all restrictions. Made smooth and timely corrections. Airspeed +20 (did not exceed flap placard)/-5 Kts.

5.10.18.2. **Q-** . Procedures required by the flight manual and applicable directives were accomplished with omissions or deviations. Slow or hesitant in following controller's instructions. Over controlled slightly or occasionally and/or slow in making corrections. Airspeed +30 (did not exceed flap placard)/-5 Kts.

5.10.18.3. **U** . Made major deviations or omissions in procedures required by the flight manual or directives. Failed to comply with controller instructions. Exceeded Q- criteria.

**5.10.19. Area 64, Non-Precision Approach (FAF-MAP).** Only approaches with a published Minimum Descent Altitude (MDA) (not DA) qualify for evaluation purposes. Approaches to minimums requiring vertical guidance do not qualify for evaluation purposes.

5.10.19.1. **Q** . Performed procedures as published/directed. Made smooth and timely corrections. Position would have permitted safe landing.

5.10.19.1.1. Airspeed +10/-5 Kts.

5.10.19.1.2. Altitude +100/-0 ft. 4.10.14.1.3.

5.10.19.1.3. Heading/Course +/-5 degrees or within one dot.

5.10.19.1.4. Timing computed to 10% of actual timing (when applicable).

5.10.19.2. **Q-** . Performed procedures with minor deviations. Slow to make corrections. Position would have allowed safe landing.

5.10.19.2.1. Airspeed +15/-5 Kts.

5.10.19.2.2. Altitude +100/-50 ft 4.10.14.2.3.

5.10.19.2.3. Heading/Course +/-10 degrees or within two dots.

5.10.19.2.4. Timing computed to 20% of actual timing (when applicable).

5.10.19.3. **U** . Performed procedures with major deviations. Erratic corrections. Exceeded Q- criteria. Maintained steady state flight below MDA even though the -50 foot momentary deviation limit was not exceeded. Position would not have permitted a safe landing.

**5.10.20. Area 65, Precision Approach (ILS, PAR) or Approach with Vertical Guidance (LPV, LNAV/VNAV, LDA with glide slope - DA.**

5.10.20.1. **Q** . Performed procedures correctly/as published. Smooth and timely corrections. Initiated appropriate action or prompt response at DA. Position would have permitted a safe landing.

5.10.20.1.1. Glide slope. Did not exceed slightly above/slightly below or one dot.

5.10.20.1.2. Airspeed +10/-5 Kts.

5.10.20.1.3. Heading/Course +/-5 degrees of controller's instructions/within 1 dot.

5.10.20.2. **Q-** . Performed procedures with minor deviations. Slow to respond/make corrections. Initiated appropriate action at DA +/-50 ft. Position would have permitted a safe landing.

5.10.20.2.1. Glide slope. Within PAR safety limits or 2 dots above/1 dot below.  
4.10.13.2.2.

5.10.20.2.2. Airspeed +15/-5 Kts.

5.10.20.2.3. Heading/Course +/-10 degrees of controller's instructions/within 2 dots.

5.10.20.3. **U** . Performed procedures with major deviations. Erratic corrections. Did not respond to controller's instructions and/or exceeded Q- criteria. Did not comply with DA. Position would not have permitted a safe landing.

5.10.21. **Area 67, Missed Approach.** Missed approach should be initiated from an instrument approach. Airspeed "+" tolerances do not apply unless assigned/restricted by ATC/tech data. Examinee did not exceed placard speeds.

5.10.21.1. **Q** . Executed missed approach as published or directed. Completed all procedures according to applicable flight manual and directives.

5.10.21.1.1. Airspeed +/- 5 Kts.

5.10.21.1.2. Heading +/- 5 degrees.

5.10.21.2. **Q-** . Executed missed approach with minor deviations. Slow to comply with published procedures, controller's instructions, flight manual procedures, or directives.

5.10.21.2.1. Airspeed +/- 10 Kts.

5.10.21.2.2. Heading +/- 10 degrees.

5.10.21.3. **U** . Executed missed approach with major deviations. Failed to comply with published procedure, controller's instructions, flight manual procedures, or directives. Exceeded Q- criteria.

5.10.22. **Area 70, Simulated Engine-Out Pattern/Landing.** AC or IP only.

5.10.22.1. **Q** . Performed pre-landing checks, traffic pattern, approach and landing in accordance with procedures outlined in the flight manual and other directives. Aircraft control was positive and smooth.

5.10.22.1.1. Airspeed on final +15/-5 Kts.

5.10.22.1.2. Airspeed Pattern + (Did not exceed Flap Placard)/ -5 Kts.

5.10.22.2. **Q-** . Minor procedural errors during pre-landing checks, traffic pattern, approach/ landing which did not affect safety. Landed in slight crab.

5.10.22.2.1. Airspeed on Final +20/-5 Kts.

5.10.22.2.2. Airspeed Pattern + (Did not exceed Flap Placard)/-10 Kts.

5.10.22.3. **U** . Failed to recognize and apply corrections to avoid over/undershoots, did not comply with procedures outlined in the flight manual/other directives. Exceeded Q- criteria.

**5.10.23. Area 74, Simulated Engine-Out/Go Around.** AC or IP only.

5.10.23.1. **Q** . Initiated and performed go-around promptly in accordance with flight manual and applicable directives. Acquired/maintained a positive climb with airspeed no less than -5 Kts.

5.10.23.2. **Q-** . Slow or hesitant to initiate go-around. Minor procedural deviations which did not affect safety. Acquired/maintained a positive climb. Airspeed not less than -10 Kts.

5.10.23.3. **U** . Did not initiate go-around when appropriate or directed. Techniques unsafe or applied incorrect procedures. Exceeded Q- criteria.

**5.10.24. Area 75, Touch and Go Landings.** Instructors will perform a touch and go as both the pilot flying and pilot monitoring to complete this area. **(T-3).**

5.10.24.1. **Q** . Complied with flight manual procedures, operational restrictions, and local directives. Ensured adequate runway length to permit a safe stop. Corrected to centerline prior to rotation. Smooth, positive aircraft control throughout takeoff phase.

5.10.24.2. **Q-** . Minor errors/deviations/omissions in flight manual procedures, operational restrictions, or local directives. Ensured adequate runway length to permit a safe stop. Slow to correct to centerline. Control rough, erratic, or hesitant during takeoff phase.

5.10.24.3. **U** . Major errors/deviations/omissions in flight manual procedures, operational restrictions, or local directives. Failed to ensure adequate runway length. Did not correct to centerline. Liftoff potentially dangerous. Over controlled aircraft.

**5.10.25. Area 465, Engine Failure During Takeoff or Climbout After Takeoff.** AC or IP only.

5.10.25.1. **Q** . Used positive application of proper control inputs. 10 Kts or less of airspeed lost. Called for and accomplished checklist in accordance with Technical Order.

5.10.25.2. **Q-** . Slow to apply proper inputs. Lost more than 10 but not greater than 15 Kts of airspeed. Slow to call for and accomplish required checklist.

5.10.25.3. **U** . Failed to properly control aircraft. Lost more than 15 Kts of airspeed. Failed to call for or accomplish required checklist.

**5.10.26. Area 746, Combat Sent Duties.**

5.10.26.1. **Q** . Satisfactorily complied with all appropriate mission procedures. Monitored mission and supervised flight with no loss of collection.

5.10.26.2. **Q-** . Accomplished mission with errors or deviations from procedures. Collection was degraded but not lost.

5.10.26.3. **U** . Errors/deviations/omissions that affected flight safety and/or the successful completion of the mission. Exceeded the Q- criteria. Lost more than 50 percent of collection requirements.

**5.10.27. Area 747, Cobra Ball Duties.**

5.10.27.1. **Q** . Satisfactorily complied with all appropriate mission procedures. Monitored mission and supervised flight with no loss of collection.

5.10.27.2. **Q-** . Accomplished mission with errors or deviations from procedures. Collection was degraded but not lost.

5.10.27.3. **U** . Errors/deviations/omissions that affected flight safety and/or the successful completion of the mission. Exceeded the Q- criteria. Lost more than 50 percent of collection requirements.

**5.10.28. Area 748, Rivet Joint Duties.**

5.10.28.1. **Q** . Satisfactorily complied with all appropriate mission procedures. Monitored mission and supervised flight with no loss of collection.

5.10.28.2. **Q-** . Accomplished mission with errors or deviations from procedures. Collection was degraded but not lost.

5.10.28.3. **U** . Errors/deviations/omissions that affected flight safety and/or the successful completion of the mission. Exceeded the Q- criteria. Lost more than 50 percent of collection requirements.

**5.10.29. Area 749, Open Skies Duties.**

5.10.29.1. **Q** . Satisfactorily complied with all appropriate mission procedures. Monitored mission and supervised flight with no loss of collection.

5.10.29.2. **Q-** . Accomplished mission with errors or deviations from procedures. Collection was degraded but not lost.

5.10.29.3. **U** . Errors/deviations/omissions that affected flight safety and/or the successful completion of the mission. Exceeded the Q- criteria. Lost more than 50 percent of collection requirements.

**5.10.30. Area 753, Constant Phoenix Duties.**

5.10.30.1. **Q** . Satisfactorily complied with all appropriate mission procedures. Monitored mission and supervised flight with no loss of collection.

5.10.30.2. **Q-** . Accomplished mission with errors or deviations from procedures. Collection was degraded but not lost.

5.10.30.3. **U** . Errors/deviations/omissions that affected flight safety and/or the successful completion of the mission. Exceeded the Q- criteria. Lost more than 50 percent of collection requirements.

## Chapter 6

### NAVIGATOR EVALUATIONS

**6.1. General.** Grading criteria contained herein cannot cover every situation. Written parameters should be tempered with sortie objectives, evaluator judgment, and task accomplishment in the determination of overall aircrew performance. Specific requirements for each evaluation are as follows:

#### **6.2. Qualification Evaluations.**

6.2.1. Ground Phase Requisites. See [Table 3.1](#)

6.2.2. Flight phase. All areas in [Table 6.1](#) under QUAL will be evaluated either in the aircraft or ATD (TVC 1) in accordance with this AFMAN and AFMAN 11-2RC-135V2 Supplement or local guidance. (T-2).

#### **6.3. Instructor Evaluations.**

6.3.1. Initial Instructor. The initial instructor evaluation should be a separate evaluation. If combined with a recurring QUAL evaluation, the examinee will be in the seat for the primary events (e.g., AR, recon orbit procedures). (T-3). Landing gear emergency extension will be demonstrated by the examinee while verbally explaining the procedure. (T-3). The examinee will demonstrate proficiency by instructing a student navigator (ideal) or a qualified navigator, in all areas required for a qualification evaluation. (T-3). The evaluator may require the examinee to demonstrate and/or present verbal instruction of AR, emergency equipment, aircraft systems, navigation procedures, and techniques.

6.3.2. Recurring Instructor. For recurring instructor evaluations, all applicable areas required in [Table 6.1](#) and all instructor areas will be evaluated. (T-2). The evaluator may require the examinee to demonstrate and/or present verbal instruction. The examinee can demonstrate proficiency by instructing a navigator who is executing primary navigator duties. These demonstrations should be briefed to the examinee and accomplished in-flight/ATD at an appropriate time so as not to interfere with the examinee's crew duties or pacing.

6.3.3. Instructor Requalification Evaluations. Will be in accordance with AFMAN 11-2RC-135V1 and AFI 11-202V2. (T-2). Follow guidance for recurring instructor evaluations.

**6.4. EPE.** Use a verbal EPE to satisfy the requirements for emergency procedures.

**6.5. Navigator Evaluation Requirements.** The table below lists areas for navigator qualification and instructor evaluations.



**Table 6.1. Navigator Evaluation Requirements.**

Area	DESCRIPTION	NOTES	QUAL
8	General Navigation/and Inflight Info		R
17	Air Refueling	6	R
20	Descent/Approach/Landing		R
755	Equipment Operation		R
296	Pacing		R
603	Landing Gear Alternate Extension	1, 6	R
751	Open Skies Operations	4	
752	Constant Phoenix Operations	5	
295	Reconnaissance Orbit Area	3	
756	Data Track	2	
1014-1020	Reserved		
<b>Notes:</b> 1. Required for INIT QUAL and INIT Instructor evaluations only. 2. Required only for RC-135S/U MSN certifications. 3. Required only for RC-135V/W MSN certifications. 4. Required only for Open Skies MSN certifications. 5. Required only for Constant Phoenix MSN certifications. 6. Not required for SSOs. “R” refers to required evaluation areas.			

**6.6. General Grading Criteria.** For grading general areas, see [Chapter 4](#).

**6.7. Specific Grading Criteria.**

**6.7.1. Area 8, General Navigation and Inflight Information. Note:** The navigator is always responsible for position awareness. Navigator’s primary responsibility for navigation commences at level off and ceases when the pilot or air traffic controller assumes responsibility for navigation to the terminal facility.

6.7.1.1. **Q** . Maintained course, any deviations were momentary and did not exceed 5 NM (2 NM or as specified for operations below Flight Level 180) from Air Route Traffic Control Center- cleared course. System crosschecks using all available resources were accomplished during the flight. Significant errors were resolved prior to the next crosscheck.

6.7.1.2. **Q-** . Did not allow the airplane to deviate more than 10 NM (4 NM or as specified for operations below Flight Level 180) from the course. System crosschecks using all available resources were accomplished during the flight.

6.7.1.3. **U** . Exceeded Q- tolerances.

6.7.2. **Area 17, Air Refueling. Note:** 1. Navigators should demonstrate proficiency in Allied Tactical Publication (ATP)-3.3.4.2., *Air-To-Air Refueling*, and established flight manual procedures. 2. AR includes rendezvous, interplane communications, and post AR. 3. Examinee should not be penalized for radio malfunctions or limitations (e.g., unable to contact a command post) that prevent revising the rendezvous time or accomplishing required radio calls on time.

6.7.2.1. **Q** . Rendezvous and AR procedures were in accordance with prescribed procedures and all checklists were accomplished with no more than minor discrepancies. Met planned AR timing +/- 1.5 minutes using all reasonable effort. If unable to make the scheduled AR rendezvous time after using speed control and route adjustment techniques, coordinated a revised Rendezvous Control Time (RVCT). No training was lost by the tanker or receiver which could be attributed to the navigator's error. Directed closure to within 1 NM of tanker or until pilots have visual with the tanker and assume responsibility for the rendezvous.

6.7.2.2. **Q-** . Displayed lack of knowledge and familiarity with the checklists and/or rendezvous and AR procedures; however, knowledge was sufficient to accomplish rendezvous and AR with minimal loss of training time/activity. Ineffective timing control resulted in unnecessarily delaying the rendezvous. Poor planning or inattention on the navigator's part caused the examinee to overlook timing control until it was too late to make the rendezvous using speed control and route adjustment techniques (greater than 1.5 minutes but less than 2.5 minutes of briefed time of the RVCT) but a revised RVCT was then coordinated prior to the IP. Receiver navigator directed closure to within 1 NM of tanker or until pilots have visual with the tanker and assume responsibility for the rendezvous. No significant amount of training was lost by the tanker or receiver.

6.7.2.3. **U** . Displayed lack of knowledge and familiarity with the checklists and/or rendezvous and AR procedures to the extent that the rendezvous or AR was jeopardized or precluded or significant training time/activity was lost. Poor planning or inattention on the navigator's part caused the examinee to overlook timing control until it was too late to make the rendezvous using speed control and route adjustment techniques, and no revision was made to the RVCT. Timing exceeded Q- tolerances. Significant training was lost by tanker or receiver. Receiver navigator was unable to direct closure to within 1 NM of tanker until pilots have visual with the tanker and assume responsibility for the rendezvous. Rendezvous radio calls were incorrect, extremely non-standard or late to a degree that caused confusion and compromised safety of flight.

6.7.3. **Area 20, Descent/Approach/Landing.**

6.7.3.1. **Q** . Monitored aircraft position and approach instructions. Configured Flight Management System (FMS) for appropriate approaches. Furnished the pilot with heading, estimated time of arrival, and other information when required. Thoroughly understood approach and/or missed approach instructions/procedures. Monitored appropriate Flight Information Publication terminal approach plate. Made all required calls, and ensured terrain clearance.

6.7.3.2. **Q-** . Monitored aircraft position but did not monitor or understand approach and/or missed approach instructions/procedures. Slow in providing headings, estimated times of arrival, and other information when required.

6.7.3.3. **U** . Failed to monitor aircraft position. Did not ensure terrain clearance during approach. Incorrectly loaded FMS and approach was delayed, or wrong approach was loaded into FMS.

**6.7.4. Area 295, Reconnaissance Orbit Area Procedures (RC-135V/W) Note:** If the reconnaissance orbit area procedures should be terminated or abbreviated for weather, equipment malfunction, emergency, or mission profile change, the evaluator may give credit for this event provided all "Q" requirements are met. May be conducted verbally with an experienced navigator.

6.7.4.1. **Q** . Orbit area procedures were in accordance with prescribed directives and were accomplished with no more than minor discrepancies. Every reasonable effort was made to make exit timing within +/- 1.5 minutes of briefed control time with no degrade to collection activity. Repositioned aircraft as required to cover tactical mission requirements and no collection was lost due to aircraft positioning.

6.7.4.2. **Q-** . Displayed a lack of knowledge and familiarity with orbit area procedures. However, knowledge was sufficient to ensure orbit area procedures were accomplished with minimal loss of training or collection activity. Exit timing was greater than 1.5 minutes but less than 2.5 minutes of briefed time.

6.7.4.3. **U** . Displayed a lack of knowledge and familiarity with orbit area procedures to the extent that the orbit area procedures were jeopardized or training time/collection activity was lost. Failed to position the aircraft over the exit point within 2.5 minutes of the briefed control time. If aircraft was covering friendly assets, collection capability was degraded due to aircraft positioning.

**6.7.5. Area 296, Pacing.**

6.7.5.1. **Q** . Held an even workflow, achieving maximum use of available time. Stayed ahead of flight progress. Expeditiously dealt with deviations from original flight plan.

6.7.5.2. **Q-** . Pacing was adequate but occasionally worked behind aircraft.

6.7.5.3. **U** . Overall pacing was unsatisfactory. Worked behind aircraft throughout most of flight.

**6.7.6. Area 603, Landing Gear Alternate Extension. Note:** Emergency extension of landing gear will be accomplished by navigators on initial qualification and initial instructor evaluations only. **(T-3).** Need not be re-accomplished when qualifying in other series aircraft equipped with C-135 emergency extension systems.

6.7.6.1. **Q** . Landing gear alternate extension procedures were performed with no deviations or with minor deviations or omissions that did not affect the safe outcome of the procedure and crew coordination was satisfactory.

6.7.6.2. **Q-** . Landing gear alternate extension procedures were performed with several minor deviations or omissions that could have affected the outcome of the procedure. Crew coordination was satisfactory with minor errors.

6.7.6.3. **U** . Landing gear alternate extension procedures were performed with major deviations or omissions that affected the safe outcome of the procedure. Crew coordination was unsatisfactory and/or safety was compromised.

**6.7.7. Area 751, Open Skies Operations.**

6.7.7.1. **Q** . Maintained course, any deviations were momentary and did not affect mission accomplishment. System crosschecks using all available resources were accomplished every 30 minutes to verify the accuracy of navigation equipment, and significant errors were resolved prior to the next crosscheck. A minimum of two Open Skies turns and three sensor legs were flown with no adverse effect on sensor operations.

6.7.7.2. **Q-** . Deviations from course were minor and would have had a minimal effect on mission accomplishment. System crosschecks using all available resources were accomplished during the flight but exceeded 30 minutes, or significant errors were not addressed in a timely manner. Improper execution of Open Skies turns would have led to a minor loss of sensor operations.

6.7.7.3. **U** . Exceeded Q- criteria.

**6.7.8. Area 752, Constant Phoenix Operations.**

6.7.8.1. **Q** . Adequately monitored position and ensured placement of aircraft to optimize collection in accordance with WC-135 orbit and re-intercept procedures. System crosschecks using all available resources were accomplished every 30 minutes to verify the accuracy of navigation equipment, and significant errors were resolved prior to the next crosscheck. Kept aircraft within bounds of operating area at all times.

6.7.8.2. **Q-** . Deviations from course were minor and would have had a minimal effect on mission accomplishment. Displayed a lack of familiarity with WC-135 orbit and re-intercept procedures. System crosschecks using all available resources were accomplished during the flight but exceeded 30 minutes, or significant errors were not addressed in a timely manner. Aircraft strayed outside the operating area boundary.

6.7.8.3. **U** . Exceeded Q- criteria.

**6.7.9. Area 755, Equipment Operation. Note:** The extent of in-flight corrective action required of the navigator to alleviate a search radar malfunction will be determined by the mission requirements.

6.7.9.1. **Q** . Navigation equipment was operated in accordance with prescribed procedures with no more than minor deviations or omissions that could not cause damage to equipment or significantly degrade system performance. Equipment malfunctions were correctly analyzed and corrected when possible for satisfactory equipment capability. The coordinates in the navigation system were never more than 5 NM in error provided there were no equipment malfunctions or Global Positioning System jamming.

6.7.9.2. **Q-** . Navigation equipment was not operated in accordance with prescribed procedures. Equipment malfunctions were incorrectly analyzed or corrective actions were incomplete or incorrect. Variations or omissions in prescribed procedures, erroneous data insertion, or faulty techniques caused a significant degradation of equipment performance. In any case actions could not have damaged equipment or jeopardized mission objectives.

The coordinates in the navigation system were never more than 10 NM in error provided there were no equipment malfunctions or Global Positioning System jamming.

6.7.9.3. U . Exceeded Q- criteria.

**6.7.10. Area 756, Data Track (RC-135S/U). Notes:** 1. RC-135S navigators shall demonstrate data track procedures by planning and flying a data track leg. **(T-3).** Data track is that portion of navigation that starts at rollout on data run until return to orbit or roll out on heading when departing the data track. Any enroute navigation exercises or procedures should terminate at roll in point at top of track (TOT) and may resume within 5 minutes of the end of data track or receipt of the return to base message. 2. During orbit and data track, aircraft position should be monitored at all times. Recording of aircraft positions on data run paperwork fulfills the requirements of aircraft position/crosscheck. 3. In-flight information will be recorded in accordance with mission directives/AFMAN 11-2RC-135V3, *RC/OC/WC/TC-135 Operations Procedures*. **(T-3).** 4. Examinee should be able to identify and discuss differences between Cobra Ball and Combat Sent navigation procedures.

6.7.10.1. Q . Present position counters were no more than 5 NM in error throughout data run provided there were no significant equipment malfunctions. Roll out at TOT was made good within 1 minute of planned/announced timing and collection was not degraded by the aircraft position. The navigator forwarded the maximum time-on-track and current true heading to the Tactical Coordinator (TC) within 2 minutes after initial rollout and all subsequent rollouts during the data run. The aircraft heading was corrected to within 2 degrees of desired data run heading not later than 3 minutes after rollout on the data track.

6.7.10.2. Q- . Present position counters were no more than 10 NM in error throughout data run provided there were no significant equipment malfunctions. Roll out at TOT was made good within 90 seconds of planned/announced timing and collection was degraded but still accomplished. The navigator forwarded the maximum time-on-track and current true heading to the TC within 3 minutes after initial rollout and all subsequent rollouts during the data run. The aircraft heading was corrected to within 3 degrees of desired data run heading not later than 5 minutes after rollout on the data track.

6.7.10.3. U . Exceeded Q- criteria.

## Chapter 7

### ELECTRONIC WARFARE OFFICER (EWO) EVALUATIONS

**7.1. General.** Grading criteria contained herein cannot cover every situation. Written parameters should be tempered with sortie objectives, evaluator judgment, and task accomplishment in the determination of overall aircrew performance. Specific requirements for each evaluation are as follows:

#### 7.2. Qualification Evaluations.

7.2.1. Ground Phase Requisites. See [Table 3.1](#)

7.2.2. Flight Phase. All areas required in [Table 7.1](#) under "QUAL" will be evaluated. (T-2).

7.2.3. Dual Qualification Evaluations. When authorized in accordance with AFIs 11-202V1 as supplemented and AFMAN 11-2RC135V1, to establish or maintain qualification in two different EWO positions on the same MDS, use the following guidance:

7.2.3.1. Dual Qualification requires a separate evaluation for each position. (T-3).

7.2.3.2. Both evaluations may be combined on one sortie provided all required grading areas are evaluated for both positions.

7.2.3.3. Requisites are normally combined.

**7.3. Difference Evaluations.** Difference training requirements are defined in AFMAN 11-2RC-135V1.

**7.4. Instructor Evaluations.** Grade all areas required in [Table 4.2](#) General grading criteria is located in [Chapter 4](#). Complete initial instructor checks during flight.

**7.5. EPE.** Use the emergency procedures criteria to evaluate EPEs. The EPE satisfies the in-flight requirements for emergency procedures, if no actual emergency procedure is experienced in-flight.

**7.6. EWO Evaluation Requirements.** The table below lists areas for EWO qualification and instructor evaluations.

**Table 7.1. EWO Evaluation Requirements.**

Area	DESCRIPTION	NOTES	QUAL
29	Equipment/Systems Knowledge	1	R
81	Tactical Planning	1	R
83	Employment	1	R
755	Equipment/Systems Operation	1	R
757	Data Collection Recording	1	R
758	Collection Debrief	1	R
1021-1025	Reserved		
<b>Notes:</b>			
1. Not required for SSOs.			

“R” refers to required evaluation areas.

**7.7. General Grading Criteria.** For grading general areas, see [Chapter 4](#).

**7.8. Specific Grading Criteria.**

**7.8.1. Area 29, Equipment/Systems Knowledge. Note:** Equipment/system discussions may be accomplished at any time prior to the critique. Evaluators should ensure discussions do not interfere with the examinee’s crew duties.

7.8.1.1. **Q** . Satisfactory knowledge of applicable reconnaissance equipment and related systems.

7.8.1.2. **Q-** . Incomplete knowledge of applicable reconnaissance equipment and related systems. Aware of and understands system limitations and cautions.

7.8.1.3. **U** . Unsatisfactory knowledge of applicable reconnaissance equipment and related systems. Unaware of or does not understand system limitations or cautions.

**7.8.2. Area 81, Tactical Planning.**

7.8.2.1. **Q** . Developed a plan considering sortie objectives, specific action points, likely threats and aircraft/crew capabilities. Determined equipment and materials required for planned mission and ensured their availability.

7.8.2.2. **Q-** . As above but with minor errors, deviations or omissions that did not significantly impact the planned mission.

7.8.2.3. **U** . Planning was insufficient to achieve sortie objectives. Major errors, deviations or omissions that significantly impacted the planned mission.

**7.8.3. Area 83, Employment.**

7.8.3.1. **Q** . Accomplished planned goals. Applied tactics or operational procedures consistent with mission objectives. Ensured aircraft was properly positioned and/or equipment was adequately configured for data collection in accordance with mission priorities and timing. Adapted to meet changing mission goals.

7.8.3.2. **Q-** . As above but with minor deviations, omissions or errors which did not prevent accomplishment of planned goals. Slow to adapt to changing goals.

7.8.3.3. **U** . Major deviations, omissions or errors which significantly impacted the accomplishment of planned goals. Applied tactics or operational procedures inconsistent with mission objectives. Failed to ensure aircraft was properly positioned and equipment was adequately configured for data collection. Failed to adapt to changing goals.

**7.8.4. Area 755, Equipment/Systems Operation. Note:** This area includes equipment operation, malfunctions, and corrective action procedures.

7.8.4.1. **Q** . Operated equipment effectively. Equipment was operated/configured according to prescribed procedures and directives. Used acceptable commands, search modes and procedures when interfacing with computer-aided systems.

7.8.4.2. **Q-** . Operated equipment hesitantly or slowly, indicating a need for study and/or corrective training. Examinee made minor omissions, deviations, or errors in prescribed procedures and directives. Actions would not have damaged equipment or jeopardized sortie success.

7.8.4.3. **U** . Did not operate/configure equipment in accordance with prescribed procedures and directives. Failed to use acceptable commands, search modes, and procedures when interfacing with computer-aided systems. Examinee made significant omissions, deviations, or errors. Equipment damage could have occurred as a result of operator error/deviation.

**7.8.5. Area 757, Data Collection/Recording. Note:** With uncorrectable equipment malfunctions, the operator should attempt to optimize data collection.

7.8.5.1. **Q** . Tasked data was intercepted, recorded, and/or annotated. Utilized adequate equipment settings and procedures. No significant data lost. Mission success was not jeopardized.

7.8.5.2. **Q-** . As above with minor omissions, deviations, or errors that did not significantly jeopardize mission success.

7.8.5.3. **U** . Failed to intercept, record, and/or adequately annotate tasked data. Significant deviations or errors. Lost significant data or jeopardized mission success.

**7.8.6. Area 758, Collection Debrief.**

7.8.6.1. **Q** . Satisfactory knowledge and performance of required procedures. Ensured materials were properly accounted for, correctly transferred and accurately debriefed mission to required personnel.

7.8.6.2. **Q-** . As above but with minor errors, deviations or omissions.

7.8.6.3. **U** . Unsatisfactory knowledge of required procedures. Major deviations in procedures. Failed to properly account for and/or transfer materials. Mission debrief to required personnel was omitted or contained major errors or omissions.



## Chapter 8

### AIRBORNE SYSTEMS ENGINEER (ASE) EVALUATIONS

**8.1. General.** Grading criteria contained herein cannot cover every situation. Written parameters should be tempered with sortie objectives, evaluator judgment, and task accomplishment in the determination of overall aircrew performance. Specific requirements for each evaluation are as follows:

#### **8.2. Qualification Evaluations.**

8.2.1. Ground Phase Requisites. See [Table 3.1](#)

8.2.2. Flight Phase. Evaluate all areas required in [Table 8.1](#) under crew position name unless not applicable to the specific aircraft and crew position as noted.

8.2.2.1. Standard requirement for an ASE evaluation is two hours system time. Actual system time may be adjusted to meet evaluation requirements.

8.2.2.2. Equipment/systems knowledge and use of block/schematic diagrams for areas listed in [Table 8.1](#) may be evaluated on the ground the duty day prior, during, and/or after the flight.

8.2.2.3. Every effort should be made to complete evaluations in-flight. Evaluation flight phase for every other recurring evaluation may be completed using static aircraft or ATD with 55 OG/CC approval.

8.2.2.3.1. If evaluating using a static aircraft or ATD, all necessary crew members will be present in order to evaluate CRM/crew coordination grading criteria. (T-3).

8.2.2.3.2. Initial Qualification evaluations will not be performed in ATD or static aircraft. (T-3).

8.2.3. Mission Scenario. ASE evaluation scenarios should reflect the aircraft and system requirements for the flight phase. Flight examiners should ensure evaluation profiles include demonstration of adequate events to measure proficiency as described in the evaluation requirements.

8.2.3.1. Examinees may use publications, reference materials, and aids that are normally available inflight to demonstrate and answer questions.

8.2.3.2. Examinees will only be required to demonstrate or answer questions that pertain to the aircraft baseline and configuration used for the flight phase of the evaluation (e.g., an evaluator should not ask questions specific to RJ Baseline 11 when the evaluation flight phase is performed on an RJ Baseline 12 aircraft). (T-3).

8.2.4. Flight examiner to examinee ratio is 1:1 for all RC-135 aircraft ASE evaluations.

**8.3. Dual Qualification Evaluations.** When authorized in accordance with AFIs 11-202V1, as supplemented and AFMAN 11-2RC-135V1, to establish or maintain qualification in two different ASE positions on the same MDS, use the following guidance. Evaluations may be combined on one sortie provided all evaluation requirements are covered for both positions and there are enough primary crewmembers present to meet the minimum crew requirements in the event of unqualified performance. If the examiner is not qualified in both crew positions, a second examiner is



“R” refers to required evaluation areas.

**8.8. General Grading Criteria.** For grading general areas, see [Chapter 4](#).

**8.9. RC-135 Specific Grading Criteria.** The following paragraphs contain grading criteria for the areas listed in [Table 8.1](#).

**8.9.1. Area 759, Operator Workstation (OWS).**

8.9.1.1. **Q.** Demonstrated satisfactory knowledge of OWS theory of operation, function, location, and power source. Performed correct boot up/shutdown procedures. Demonstrated familiarity with OWS software functions/menus and Keyboard, Video, Mouse (KVM) menus. Demonstrated knowledge of KVM In-phase and Quadrature (IQ) Interface Module rename procedures. Demonstrated adequate knowledge of or correctly performed OWS troubleshooting/fault isolation, OWS remove and replace procedures, and manual/automated system tests.

8.9.1.2. **Q-.** Limited knowledge. Performed correct boot up/shutdown procedures with minor errors or delays. Limited knowledge of OWS software functions/menus or KVM menus. Marginal knowledge of KVM IQ Interface Module rename procedures. Demonstrated limited knowledge of OWS troubleshooting/fault isolation, OWS remove and replace procedures, or manual/automated system tests.

8.9.1.3. **U.** Unsatisfactory knowledge. Unable to correctly perform boot up/shutdown procedures. Unsatisfactory knowledge of OWS software functions/menus or KVM menus. Lacked knowledge of KVM IQ Interface Module rename procedures. Lacked knowledge of or incorrectly performed OWS troubleshooting/fault isolation, OWS remove and replace procedures, or manual/automated system test.

**8.9.2. Area 980, Power Distribution.**

8.9.2.1. **Q.** Demonstrated/explained knowledge of power distribution theory of operation, equipment function, and component location. Correctly operated applicable Mission Power Monitor and Control Panel. Described power/signal flow to block diagram level. Correctly interpreted power indications/tolerances. Demonstrated knowledge of power fault isolation and troubleshooting procedures.

8.9.2.2. **Q-.** Limited knowledge of power distribution. Correctly operated applicable Mission Power Monitor or Control Panel with minor errors or deviations. Described power/signal flow with minor errors or omissions. Correctly interpreted power indications/tolerances with minor errors or deviations. Marginal knowledge of power fault isolation or troubleshooting procedures.

8.9.2.3. **U.** Lacked knowledge of power distribution. Failed to operate applicable Mission Power Monitor or Control Panel. Unable to describe power/signal flow. Unable to interpret power indications/tolerances. Unsatisfactory knowledge of power fault isolation or troubleshooting procedures.

**8.9.3. Area 981, Interphone System.**

8.9.3.1. **Q.** Demonstrated satisfactory interphone system knowledge. Demonstrated adequate knowledge of system theory of operation, equipment function, and component

locations. Demonstrated correct configuration and operation of ETD101 and applicable FORCE interphone components. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions.

8.9.3.2. **Q-.** Limited knowledge of interphone system. Demonstrated adequate knowledge of system with minor errors or omissions. Demonstrated correct configuration or operation of with minor errors or deviations. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays.

8.9.3.3. **U.** Unsatisfactory system knowledge. Demonstrated correct configuration and operation with minor errors or deviations. Failed to correctly configure or operate of ETD101 or applicable FORCE interphone components. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

#### 8.9.4. **Area 982, Networking Systems.**

8.9.4.1. **Q.** Demonstrated satisfactory knowledge of aircraft networking systems, to include Local Area Network hardware components, terminal/serial servers. Adequate knowledge of network topology, protocols, and cabling. Performed proper power on and checkout of aircraft network systems. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to networking system malfunctions.

8.9.4.2. **Q-.** Demonstrated incomplete or unsatisfactory knowledge of aircraft networking systems. Marginal knowledge of network topology, protocols, or cabling. Performed power-on or checkout procedures with minor errors. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays.

8.9.4.3. **U.** Lacked networking system knowledge. Unsatisfactory knowledge of network topology, protocols, or cabling. Unable to perform power-on or checkout procedures. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to networking system malfunctions.

#### 8.9.5. **Area 983, Navigation/Time/Reference.**

8.9.5.1. **Q.** Demonstrated/explained satisfactory knowledge of navigation, time, and reference signal distribution systems. Described equipment location, function, signal/data flow, and power requirements for navigation, time and reference signal components. Correctly performed power-on procedures. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions.

8.9.5.2. **Q-.** Limited knowledge of navigation, time, and reference signal distribution systems. Difficulty describing equipment location, function, signal/data flow, or power requirements. Correctly performed power-on procedures with minor errors or deviations. Interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays.

8.9.5.3. **U.** Unsatisfactory knowledge of systems. Failed to describe location, function, signal/data flow, or power requirements. Unable to perform power-on procedures. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to networking system malfunctions.

#### 8.9.6. **Area 984, Audio/Video/IF/Radio Frequency (RF) Distribution.**

8.9.6.1. **Q.** Demonstrated satisfactory knowledge of applicable audio, video, Intermediate Frequency (IF), and Radio Frequency (RF) distribution systems. Familiar with applicable Audio distribution components to include functional description and signal/data flow. Demonstrated knowledge of video routing between signal processing equipment and video switching functions. Described IF creation, switching, and distribution to applicable receivers. Demonstrated clear understanding of RF distribution to block diagram level. Able to trace RF signal path from reception at antennas to applicable processing/storage equipment. Interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions.

8.9.6.2. **Q-.** Marginal knowledge of applicable audio, video, IF and RF Distribution systems. Limited knowledge of applicable audio distribution components. Demonstrated knowledge of Video routing with minor errors or omissions. Minor omissions or errors in described IF creation, switching, or distribution to applicable receivers. Limited understanding of RF distribution. Some difficulty tracing RF signal path from reception at antennas to applicable processing/storage equipment. Interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with errors or delays.

8.9.6.3. **U.** Lacked knowledge of applicable Audio, Video, IF and RF Distribution systems. Unsatisfactory knowledge of applicable Audio distribution components. Unable to demonstrate knowledge of Video routing between signal processing equipment or Video switching functions. Unable to describe IF creation, switching, or distribution to applicable receivers. Lacked understanding of RF distribution. Unable to trace RF signal path from reception at antennas to applicable processing/storage equipment. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

#### 8.9.7. **Area 985, Processors.**

8.9.7.1. **Q.** Demonstrated satisfactory knowledge of applicable processors. Demonstrated clear understanding of processor location, function, and theory of operation. Demonstrated/explained correct procedures to load, initialize, and configure applicable processors and related subsystems. Able to correctly utilize applicable snapshot restore or support scripts. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions. Demonstrated/explained applicable backup processor procedures.

8.9.7.2. **Q-.** Marginal knowledge of applicable processors. Limited understanding of processor location, function, or theory of operation. Demonstrated/explained correct procedures to load, initialize, or configure applicable processors or related subsystems with minor errors or deviations. Difficulty utilizing applicable snapshot restore or support scripts. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with errors or delays. Difficulty demonstrating/explaining applicable backup processor procedures.

8.9.7.3. **U.** Unsatisfactory knowledge of applicable processors. Lacked understanding of processor location, function, or theory of operation. Failed to demonstrate/explain correct procedures to load, initialize, or configure applicable processors or related subsystems. Unable to utilize applicable snapshot restore or support scripts. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions. Unable to demonstrate/explain applicable backup processor procedures.

**8.9.8. Area 986, Maintenance System.**

8.9.8.1. **Q.** Satisfactory knowledge of applicable maintenance station test equipment. Demonstrated clear understanding of test equipment theory of operation, signal flow, and switching functions. Correctly configured and operated test equipment to troubleshoot and isolate system malfunctions. Correctly performed applicable manual system tests, automated system tests, and boresights. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to system malfunctions.

8.9.8.2. **Q-.** Marginal knowledge of applicable maintenance station test equipment. Demonstrated limited understanding of test equipment theory of operation, signal flow, or switching functions. Difficulty configuring or operating test equipment. Correctly performed applicable manual system tests, automated system tests, and boresights with minor omission or deviations. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays.

8.9.8.3. **U.** Unsatisfactory knowledge of applicable maintenance station test equipment. Lacked understanding of test equipment theory of operation, signal flow, or switching functions. Unable to configure or operate test equipment. Failed or unable to perform applicable manual or automated system tests or boresights. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

**8.9.9. Area 987, Search System Tasking.**

8.9.9.1. **Q.** Demonstrated satisfactory knowledge of Search System Tasking. Correctly described search system tasking and breakout. Demonstrated/explained knowledge of assignment creation and recall. Able to correctly perform operational checkout of search system equipment. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to system malfunctions.

8.9.9.2. **Q-.** Demonstrated marginal knowledge of receiver/search systems. Correctly described search system taking or breakout with minor delays or omissions. Demonstrated/explained knowledge of assignment creation and recall with minor errors or delays. Performed operational checkout of search system equipment with minor errors or deviations. Slow to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to system malfunctions.

8.9.9.3. **U.** Lacked knowledge of receiver/search systems. Demonstrated unsatisfactory understanding of equipment theory of operation, signal flow, power source, function, or location. Unable to describe search system tasking or breakout. Failed to demonstrate knowledge of assignment creation or recall. Unable to perform operational checkout of search system equipment. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to system malfunctions.

**8.9.10. Area 988, Storage Systems.**

8.9.10.1. **Q.** Satisfactory knowledge of applicable storage systems (e.g., filer, HSDC, CDS). Demonstrated clear understanding of storage systems theory of operation, data flow, equipment function, and location. Familiar with and able to correctly utilize applicable support scripts. Performed correct filer power-on and boot procedures.

Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to system malfunctions.

8.9.10.2. **Q-.** Limited knowledge of applicable storage systems. Demonstrated limited understanding of system theory of operation, data flow, equipment function, or location. Limited knowledge of applicable support scripts or utilized support scripts with minor errors or delays. Performed correct filer power-on and boot procedures with minor errors or delays. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays.

8.9.10.3. **U.** Unacceptable knowledge of applicable Storage Systems. Lacked understanding of theory of operation, data flow, equipment function, or location. Unfamiliar with, unable to, or incorrectly utilized applicable support scripts. Unable to perform correct filer power-on or boot procedures. Unable to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

#### 8.9.11. **Area 989, Reachback Systems**

8.9.11.1. **Q.** Satisfactory knowledge of applicable reachback systems and Air Communication Terminal (ACT). Demonstrated clear understanding of system theory of operation, signal/data flow, and terminology. Correctly configured system to provide connectivity. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to system malfunctions. Effectively communicated connection type/status for off-board reporting.

8.9.11.2. **Q-.** Limited knowledge of Reachback systems and ACT. Demonstrated marginal understanding of system theory of operation, signal/data flow, or terminology. Correctly configured system with minor errors or deviations. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays. Did not effectively communicate connection type/status, or did so with minor errors.

8.9.11.3. **U.** Unacceptable knowledge of Reachback systems and ACT. Lacked understanding of system theory of operation, signal/data flow, or terminology. Unable to configure system; unable to provide connectivity. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions. Unable to communicate connection type/status, or did so with major errors.

#### 8.9.12. **Area 990, Datalinks.**

8.9.12.1. **Q.** Satisfactory knowledge of Joint Tactical Information Distribution System, Joint Tactical Terminal, and related subsystems. Demonstrated clear understanding of system theory of operation, component locations, and signal/data flow. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to system malfunctions.

8.9.12.2. **Q-.** Marginal system knowledge. Demonstrated limited understanding of system theory of operation, component locations, or signal/data flow. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays.

8.9.12.3. **U.** Unacceptable knowledge of Joint Tactical Information Distribution System, Joint Tactical Terminal, or related subsystems. Lacked understanding of system theory of operation, component locations, or signal/data flow. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

**8.9.13. Area 991, Radios.**

8.9.13.1. **Q.** Satisfactory knowledge of radio equipment and related subsystems. Demonstrated clear understanding of theory of operation, signal/data flow, equipment function, and circuit breaker location. Performed correct operational checkout of radios, encryption devices, and related subsystems. Correctly interpreted and analyzed errors, troubleshoot, and applied corrective measures to system malfunctions

8.9.13.2. **Q-.** Marginal knowledge of radio equipment or related subsystems. Demonstrated limited understanding of theory of operation, signal/data flow, equipment function, or circuit breaker location. Performed correct operational checkout of Radios, encryption devices, and related subsystems with errors or deviations. Correctly interpreted and analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays.

8.9.13.3. **U.** Unacceptable knowledge of radio equipment or related subsystems. Lacked understanding of theory of operation, signal/data flow, equipment function, location, or circuit breaker location. Unable to perform operational checkout of Radios, encryption devices, or related subsystems with errors or deviations. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

**8.9.14. Area 996, Maintenance Support Equipment.**

8.9.14.1. **Q.** Demonstrated adequate knowledge of Maintenance Laptop (MLT) kit components. Demonstrated ability to correctly utilize MLT to perform equipment programming. Familiar with MLT kit cables, adapters, and test equipment. Performed appropriate toolkit inventory and accountability procedures. Demonstrated satisfactory knowledge of tool kit components and their proper use.

8.9.14.2. **Q-.** Demonstrated marginal knowledge of MLT kit components or equipment programming procedures. Demonstrated ability to correctly utilize MLT with minor errors or deviations. Limited knowledge of MLT kit cables, adapters, and test equipment. Performed appropriate toolkit inventory or accountability procedures with minor errors or deviations. Difficulty demonstrating satisfactory knowledge of tool kit components or their proper use. Deviations or errors did not jeopardize safety.

8.9.14.3. **U.** Unsatisfactory knowledge of MLT kit components or equipment programming procedures. Unable to correctly utilize MLT. Lacked knowledge of MLT kit cables, adapters, or test equipment. Failed to perform appropriate toolkit inventory or accountability procedures. Failed to demonstrate satisfactory knowledge of tool kit components or their proper use. Deviations or errors did or could have compromised safety.

**8.9.15. Area 992, Environmental Control Systems.**

8.9.15.1. **Q.** Demonstrated satisfactory knowledge of applicable aircraft Environmental Control Systems (e.g., Liquid Cooling System/Vent Cooling System, Pack Air



Conditioning, and auxiliary heat). Correctly described environmental control system theory of operation. Correctly configured system(s) to provide effective cooling of mission systems. Correctly interpreted/analyzed Environmental Data Instrumentation Software (EDIS) indications. Knowledgeable of operational restrictions and limitations associated with degraded system(s).

8.9.15.2. **Q-.** Marginal system(s) knowledge. Difficulty describing applicable Environmental Control Systems theory of operation. Correctly configured system(s) to provide cooling with minor errors or delays. Minor omissions or errors when interpreting/analyzing EDIS indications. Limited knowledge of operational restrictions or limitations associated with degraded system(s).

8.9.15.3. **U.** Unsatisfactory system(s) or procedural knowledge. Unable to describe applicable Environmental Control System theory of operation. Failed to correctly preflight system(s) or provide effective cooling. Major omissions or errors when interpreting/analyzing EDIS indications. Limited knowledge of operational restrictions or limitations associated with degraded system(s). Lacked knowledge of operational restrictions or limitations associated with degraded system(s).

#### 8.9.16. **Area 993, Modern Collection Systems (MCS).**

8.9.16.1. **Q.** Satisfactory knowledge of applicable MCS (e.g., Digital Receiver Technology, Advanced Wideband Processor, FireHawk, and External Memory Profile). Demonstrated clear understanding of theory of operation, signal/data flow, equipment/application function, component locations. Performed correct operational checkout of MCS. Correctly interpreted and analyzed errors, troubleshoot, and applied corrective measures to system malfunctions.

8.9.16.2. **Q-.** Marginal knowledge of applicable MCS. Demonstrated limited understanding of theory of operation, signal/data flow, equipment/application function, and component locations. Difficulty performing correct operational checkout of MCS. Correctly interpreted and analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays.

8.9.16.3. **U.** Unacceptable knowledge of applicable MCS. Lacked understanding of theory of operation, signal/data flow, equipment/application function, location, or component locations. Unable to correctly perform operational checkout of MCS. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

#### 8.9.17. **Area 994, Electronic Intelligence (ELINT) Systems.**

8.9.17.1. **Q .** Demonstrated complete knowledge of ELINT systems, to include applicable precision, automatic, and related subsystems. Demonstrated clear understanding of systems theory of operation, to include signal/data flow and networked storage. Correctly performed operational checkout of ELINT system(s). Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions. Performed correct Terminate Collect (TCOL) and shutdown procedures.

8.9.17.2. **Q-.** Limited knowledge of ELINT systems and subsystems. Demonstrated marginal understanding of systems theory of operation. Difficulty performing correct

operational checkout. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays. Performed TCOL or shutdown procedures with minor errors or delays. Errors or deviations did not lead to data loss.

8.9.17.3. **U.** Lacked knowledge of ELINT systems and subsystems. Failed to demonstrate satisfactory knowledge of ELINT and subsystem theory of operation. Unable to perform operational checkout. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures, or did so with major errors or unacceptable delays. Unable to or incorrectly performed TCOL procedures. Errors or deviations led to data loss.

**8.9.18. Area 995, Signal Search and Development (SSD) Systems.**

8.9.18.1. **Q.** Satisfactory knowledge of applicable SSD Systems. Demonstrated clear understanding of theory of operation, signal/data flow, data storage, and equipment/application functions. Performed correct operational checkout of SSD Systems. Correctly interpreted and analyzed errors, troubleshoot, and applied corrective measures to system malfunctions.

8.9.18.2. **Q-.** Marginal knowledge of SSD systems. Demonstrated limited understanding of theory of operation, signal/data flow, data storage, or equipment/application functions. Performed correct operational checkout of SSD systems with minor errors or delays. Correctly interpreted and analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or delays.

8.9.18.3. **U.** Unacceptable knowledge of SSD systems. Lacked understanding of theory of operation, signal/data flow, data storage, or equipment/application functions. Unable to correctly perform operational checkout of SSD systems. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

**8.9.19. Area 997, Optical Sensor Suite.**

8.9.19.1. **Q.** Demonstrated thorough knowledge of the Optical Sensor Systems, to include Surveillance, Locations, and Acquisition Array, Tracker Optical System (SLAATOS) and MCS. Demonstrated satisfactory knowledge of theory of operation and signal/data flow. Correctly performed operational checkout of the systems. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions.

8.9.19.2. **Q-.** Limited knowledge of Optical Sensor Systems. Demonstrated satisfactory knowledge of theory of operation and signal/data flow with minor errors or omissions. Minor errors or deviations when performing system checkout. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions with minor errors or omissions.

8.9.19.3. **U.** Lacked knowledge of Optical Tracking Systems and subsystems. Unsatisfactory system knowledge. Unable to perform operational checkout. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures, or did so with major errors or unacceptable delays.

**8.9.20. Area 998, Scientific and Technical Processing (STP).**

8.9.20.1. **Q.** Demonstrated a thorough knowledge of STP, to include Common Aperture Radio Frequency, Primary Sensor Management System, and STP subsystems.

Demonstrated clear understanding of STP and subsystem theory of operation, to include signal/data flow and networked storage. Able to trace RF signal path from reception at antennas to processing/storage equipment. Correctly performed operational checkout of the system. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions. Correctly performed Data Offload and shutdown procedures.

8.9.20.2. **Q-.** Limited knowledge of STP and subsystems. Marginal understanding of STP and subsystem theory of operation. Difficulty tracing RF signal path from reception at antennas to processing/storage equipment. Correctly performed operational checkout of the system with minor errors or deviations. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays. Correctly performed data offload and shutdown procedures with minor errors or deviations. Errors or deviations did not lead to data loss.

8.9.20.3. **U.** Lacked knowledge of STP and subsystems. Demonstrated unsatisfactory knowledge of STP and subsystems theory of operation. Unable to trace RF signal path from reception at antennas to processing/storage equipment. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures, or did so with major errors or unacceptable delays. Unable to or incorrectly performed data offload and shutdown procedures. Errors or deviations led to data loss.

#### 8.9.21. **Area 999, Airborne Tracking System (ATS).**

8.9.21.1. **Q.** Demonstrated/explained a complete knowledge of ATS. Explained system theory of operation and signal flow. Correctly performed system operational checkout. Able to describe altitude, cooling, and safety-related system limitations. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions. Operated the system in a safe manner.

8.9.21.2. **Q-.** Limited knowledge of ATS system. Explained system theory of operation or signal flow with minor errors or omissions. Correctly performed system operational checkout with minor errors or deviations. Difficulty describing ATS system limitations. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays. Deviations or errors did not jeopardize safety.

8.9.21.3. **U.** Unsatisfactory system knowledge. Unable to explained system theory of operation or signal flow. Unable to perform system checkout. Failed to correctly describe system limitations. Failed to correctly interpret/analyze errors, troubleshoot, or apply corrective measures, or did so with major errors or unacceptable delays. Deviations or errors did or could have compromised safety.

## Chapter 9

### SENSOR MAINTENANCE TECHNICIAN (SMT) EVALUATIONS

**9.1. General.** Grading criteria contained herein cannot cover every situation. Written parameters should be tempered with sortie objectives, evaluator judgment, and task accomplishment in the determination of overall aircrew performance. Specific requirements for each evaluation are as follows:

#### **9.2. Qualification Evaluations.**

9.2.1. Ground Phase Requisites. See [Table 3.1](#)

9.2.2. Flight Phase. Evaluate all areas required in [Table 9.1](#) under crew position name unless not applicable to the specific aircraft and crew position as noted.

9.2.2.1. Equipment/systems knowledge and use of block/schematic diagrams for areas listed in [Table 9.1](#) may be evaluated on the ground the duty day prior, during, and/or after the flight.

9.2.2.2. Every effort should be made to complete evaluations in-flight. Evaluation flight phase for every other recurring evaluation may be completed using static aircraft with 55 OG/CC approval.

9.2.2.2.1. If evaluating using a static aircraft, all necessary crew members will be present in order to evaluate CRM/crew coordination grading areas. (T-3).

9.2.2.2.2. Initial Qualification evaluations will not be performed with static aircraft. (T-3).

9.2.3. Mission Scenario. SMT evaluation scenarios should reflect the aircraft and system requirements for the flight phase. Flight examiners should ensure evaluation profiles include demonstration of adequate events to measure proficiency as described in the evaluation requirements. Examinees may use publications, reference materials, and aids that are normally available inflight to demonstrate and answer questions.

9.2.4. Flight examiner to examinee ratio is 1:1 for all OC -135 aircraft.

**9.3. Instructor Evaluations.** Specific criteria are included in [Chapter 4](#) and [Table 4.2](#)

**9.4. Emergency Procedures Evaluation (EPE).** Evaluate an SMT's knowledge of emergency procedures and equipment on all initial and periodic evaluations. Accomplish the EPE on the ground, in-flight, or by another method determined by the examiner or unit Stan/Eval. For EPEs, the FE will include sufficient in-flight and ground emergencies to evaluate the examinee's knowledge of systems and procedures to the flight examiner's satisfaction. (T-3).

**9.5. SMT Evaluation Requirements.**

**Table 9.1. SMT (OC-135) Evaluation Requirements.**

Area	Area/TITLE	NOTES
29	Power Distribution	
736	Interphone System	
737	Camera System	1
738	Integrated Data Annotation Recording and Mapping System (IDARMS)	1
739	Maintenance Support	
740	Digital Visual Imaging System (DVIS)	2
<b>Notes:</b> 1. Only required on aircraft with legacy system. 2. Only required on DVIS-modified aircraft.		

**9.6. General Grading Criteria.** For grading general areas, see [Chapter 4](#).

**9.7. OC-135 SMT Specific Grading Criteria.** The following paragraphs contain grading criteria for the areas listed in [Table 9.1](#)

**9.7.1. Area 29, Power Distribution.**

9.7.1.1. **Q.** Demonstrated/explained knowledge of power distribution theory of operation, equipment function, and component location. Correctly operated electrical system control panel/mission power control panel. Described power/signal flow to block diagram level. Correctly interpreted power indications/tolerances. Demonstrated knowledge of power fault isolation and troubleshooting procedures.

9.7.1.2. **Q-.** Limited knowledge of power distribution. Correctly operated applicable power control panel(s) with minor errors or deviations. Described power/signal flow with minor errors or omissions. Correctly interpreted power indications/tolerances with minor errors. Marginal knowledge of power fault isolation or troubleshooting procedures.

9.7.1.3. **U.** Lacked knowledge of power distribution. Failed to operate applicable power control panel(s). Unable to describe power/signal flow. Unable to interpret power indications/tolerances. Unsatisfactory knowledge of power fault isolation or troubleshooting procedures.

**9.7.2. Area 736, Interphone System.**

9.7.2.1. **Q.** Demonstrated/explained satisfactory knowledge of interphone system. Described location, function, signal flow, and power requirements for system components. Correctly operated mission area interphone system.

9.7.2.2. **Q-.** Marginal system knowledge. Difficulty describing location, function, signal flow, or power requirements for system components. Correctly operated mission area interphone system with minor errors or delays.

9.7.2.3. **U.** Unsatisfactory knowledge of interphone system. Unable to describe location, function, signal flow, and power requirements. Failed to correctly operate mission area interphone system.

**9.7.3. Area 737, Camera System.**

9.7.3.1. **Q.** Demonstrated a thorough knowledge of camera system and related subsystems. Demonstrated clear understanding of system theory of operation and signal flow. Correctly performed operational checkout and configuration of the system. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions.

9.7.3.2. **Q-.** Limited knowledge of camera system or related subsystems. Had some difficulty demonstrating understanding of system theory of operation or signal flow with minor errors or omissions. Correctly performed operational checkout and configuration of the system with delays, errors, or deviations. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays.

9.7.3.3. **U.** Unsatisfactory system or procedural knowledge. Demonstrated unsatisfactory knowledge of system theory of operation or signal flow. Unable to correctly perform operational checkout or configuration of the system. Failed to interpret/analyze errors, troubleshoot, or apply corrective measures to malfunctions.

**9.7.4. Area 738, IDARMS.**

9.7.4.1. **Q.** Demonstrated complete knowledge of IDARMS and related subsystems. Demonstrated clear understanding of systems theory of operation. Described power/signal flow to block diagram level. Correctly performed power-on, operational checkout, and power-off procedures. Demonstrated/explained satisfactory knowledge of manual/automated system tests. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions.

9.7.4.2. **Q-.** Marginal system knowledge. Marginal understanding of systems theory of operation. Had some difficulty describing power/signal flow to block diagram level. Correctly performed power-on, operational checkout, or power-off procedures with minor errors or deviations. Demonstrated/explained limited knowledge of manual/automated system tests. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays.

9.7.4.3. **U.** Unsatisfactory system knowledge. Lacked understanding of systems theory of operation. Unable to describe power/signal flow to block diagram level. Unable to perform correct power-on, operational checkout, or power-off procedures with minor errors or deviations. Demonstrated/explained limited knowledge of manual/automated system tests. Failed to interpret/analyze errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays.

**9.7.5. Area 739, Maintenance Support.**

9.7.5.1. **Q.** Demonstrated adequate knowledge of maintenance support equipment and tool kit. Performed appropriate toolkit inventory and accountability procedures. Demonstrated satisfactory knowledge of tool kit components and their proper use.

9.7.5.2. **Q-.** Demonstrated marginal knowledge maintenance support equipment or tool kit. Performed appropriate toolkit inventory or accountability procedures with minor errors or omissions. Difficulty demonstrating satisfactory knowledge of tool kit components or their proper use. Deviations or errors did not jeopardize safety.

9.7.5.3. **U.** Unsatisfactory knowledge maintenance support equipment or tool kit. Failed to perform appropriate toolkit inventory or accountability procedures. Lacked knowledge of tool kit components or their use. Failed to demonstrate satisfactory knowledge of tool kit components or their proper use. Deviations or errors did or could have compromised safety.

**9.7.6. Area 740, Digital Visual Imaging System (DVIS).**

9.7.6.1. **Q.** Demonstrated complete knowledge of DVIS and related subsystems. Demonstrated clear understanding of systems theory of operation. Described power/signal flow to block diagram level. Correctly performed power-on, operational checkout, and power-off procedures. Demonstrated/explained satisfactory knowledge of manual/automated system tests. Correctly interpreted/analyzed errors, troubleshoot, and applied corrective measures to malfunctions.

9.7.6.2. **Q-.** Marginal system knowledge. Marginal understanding of DVIS theory of operation. Had some difficulty describing power/signal flow to block diagram level. Correctly performed power-on, operational checkout, or power-off procedures with minor errors or deviations. Demonstrated/explained limited knowledge of manual/automated system tests. Correctly interpreted/analyzed errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays.

9.7.6.3. **U.** Unsatisfactory system knowledge. Lacked understanding of DVIS theory of operation. Unable to describe power/signal flow to block diagram level. Unable to perform correct power-on, operational checkout, or power-off procedures with minor errors or deviations. Demonstrated/explained limited knowledge of manual/automated system tests. Failed to interpret/analyze errors, troubleshoot, or applied corrective measures to malfunctions with minor errors or delays.

## Chapter 10

### CRYPTOLOGIC MISSION CREW (CMC) EVALUATIONS

**10.1. General.** The criteria contained in this chapter are applicable to qualification flight evaluations for the CMC positions on all RC-135 aircraft. For the purposes of this manual the CMC is comprised of Cryptologic Operators (COs), Signals Search and Development operators (SSDs), Airborne Mission Supervisors (AMSs), Airborne Analysts (AAs), and Data Link Operators (DLOs). Grading criteria contained herein cannot cover every situation. Written parameters should be tempered with sortie objectives, evaluator judgment, and task accomplishment in the determination of overall aircrew performance. Specific requirements for each evaluation are as follows:

#### 10.2. Qualification Evaluations.

10.2.1. Ground Phase Requisites. See [Table 3.1](#)

10.2.2. Flight Phase. Evaluate all areas required in [Table 10.1](#) under CO, SSD, AMS, AA, DLO, unless not applicable to the specific qualification as noted.

10.2.3. Dual Qualification Evaluations. When authorized in accordance with AFI 11-202V1 as supplemented and AFMAN 11-2RC-135V1, to establish or maintain qualification in two different positions on the same MDS, a separate evaluation is required for each position. (T-3). Evaluations may be combined on one sortie provided all required grading areas are covered for each position.

**10.3. Instructor Evaluations.** All areas required in [Table 4.2](#) will be evaluated. (T-2).

**10.4. Emergency Procedures Evaluation (EPE).** The EPE satisfies the in-flight requirements for emergency procedures.

**10.5. Evaluation Requirements.** The table below lists areas for CO, SSD, DLO, AA, AMS and instructor qualification evaluations.

**Table 10.1. CO, SSD, DLO, AA, AMS Evaluation Requirements.**

Area	DESCRIPTION	NOTES	CO	SSD	DLO	AA	AMS
13	Crew Management						R
29	System Capabilities				R	R	R
42	Data Link Procedures				R	R	R
84	Mission Coordination				R	R	R
85	Communications Systems				R	R	R
111	Search and Acquisition		R	R	R	R	R
755	Equipment/System Operations/Knowledge			R			
759	Operator Workstation Utilization (OWS)		R	R	R	R	R
760	Graphics Functions		R	R	R	R	R
761	Geo-location Data		R	R	R	R	R



762	Track Management		R	R	R	R	R
765	Receiver Manipulation		R	R	R	R	R
767	System Applications		R	R	R	R	R
768	Tasking and Reporting				R	R	R
769	Combat Advisory Broadcast/Imminent Threat Warning (CAB/ITW)				R	R	R
770	Management Specific System Functions				R	R	R
771	Signals Collection and Recording			R			
1025- 1030	Reserved						
<b>Note:</b> “R” Refers to required evaluation areas.							

**10.6. General Grading Criteria.** For grading general areas, see [Chapter 4](#).

### 10.7. Specific Grading Criteria.

#### 10.7.1. Area 13, Crew Management.

10.7.1.1. **Q** . Applied effective crew management concepts. Responded appropriately to unpredictable situations, crew illness, system malfunctions, divert/Remain Over Night (RON) situations, etc. Effectively managed RC-135 aircrew with minor omissions, deviations or errors.

10.7.1.2. **Q-** . Same as above but omissions, deviations, or errors detracted from planned mission success.

10.7.1.3. **U** . Did not apply crew management concepts. Failed to respond to unpredictable situations, crew illness, system malfunctions, divert/RON procedures, etc. Mismanaged aircrew and jeopardized mission success.

#### 10.7.2. Area 29, System Capabilities.

10.7.2.1. **Q** . Demonstrated satisfactory knowledge of system capabilities, major and minor processors, sub-processors, receiver configuration and usage, and back-up/redundant systems with minor deviations, omissions, or errors which did not detract from mission success.

10.7.2.2. **Q-** . Demonstrated satisfactory knowledge of system capabilities, major and minor processors, sub-processors, receiver configuration and usage, and back-up/redundant systems with minor errors, omissions, or deviations which detracted from mission accomplishment but did not jeopardize mission success.

10.7.2.3. **U** . Failed to demonstrate knowledge of system capabilities, major and minor processors, sub-processors, receiver configuration and usage, and back-up/redundant systems. Major errors, omissions, or deviations jeopardized mission success.

**10.7.3. Area 42, Data Link Procedures.**

10.7.3.1. **Q** . Demonstrated adequate knowledge of data link processors, systems, and net procedures. Performed Data Link operations as required. Minor deviations or errors did not detract from mission accomplishment.

10.7.3.2. **Q-** . Demonstrated limited knowledge of data link processors, systems, and net procedures. Omissions, errors or deviations detracted from mission accomplishment but did not jeopardize mission accomplishment.

10.7.3.3. **U** . Failed to demonstrate adequate knowledge of data link processors, systems, and net procedures. Deviations, errors, or omissions jeopardized mission success.

**10.7.4. Area 84, Mission Coordination.**

10.7.4.1. **Q** . Effectively coordinated with off-board agencies, controlling authorities and platforms, and demonstrated adequate knowledge of their functions. Provided timely direction or information as required which clarified or rectified a situation.

10.7.4.2. **Q-** . Adequately coordinated with off-board agencies, controlling authorities and platforms but demonstrated limited knowledge of their functions. Showed some hesitation to provide timely direction/information which would have clarified confusion or rectified a situation.

10.7.4.3. **U** . Coordination with off-board agencies, controlling authorities and platforms and lack of knowledge of their functions/responsibilities was detrimental to flying safety or mission effectiveness. Did not provide timely direction/information that would have clarified/rectified a situation.

**10.7.5. Area 85, Communications Systems.**

10.7.5.1. **Q** . Effectively operated communications equipment to satisfy mission requirements.

10.7.5.2. **Q-** . Operated communications equipment with minor errors, omissions, or deviations, which affected mission accomplishment but did not jeopardize mission success.

10.7.5.3. **U** . Failed to effectively operate communications equipment. Major errors, omissions or deviations jeopardized mission success.

**10.7.6. Area 111, Search and Acquisition.**

10.7.6.1. **Q** . Demonstrated the ability to set, modify, and manipulate automatic and manual assignments as required. Able to display and modify search queues, conduct manual and panoramic Signal Display Unit search. Able to upgrade manual search assignments in accordance with governing directives. Able to perform audio recall and release assignment. Minor errors or deviations did not detract from task accomplishment or the accomplishment of the mission tasking.

10.7.6.2. **Q-** . Had difficulty setting, modifying, manipulating, or recalling assignments. Committed minor deviations that did not result in significant data loss or detract from mission success.

10.7.6.3. **U** . Failed to demonstrate the ability to perform the above tasks. Major errors degraded accomplishment of mission tasking and/or jeopardized mission success.

**10.7.7. Area 755, Equipment/System Operations/Knowledge.**

**Note:** Equipment/system discussions may be accomplished at any time prior to the critique.

10.7.7.1. **Q** . Demonstrated satisfactory use and/or knowledge of applicable equipment.

10.7.7.2. **Q-** . Operated equipment hesitantly or slowly, indicating incomplete knowledge. Examinee made minor omissions, deviations, or errors in prescribed procedures and directives but did not jeopardize sortie success.

10.7.7.3. **U** . Did not operate/configure equipment in accordance with prescribed procedures and directives. Failed to use acceptable commands, search modes, and procedures when interfacing with computer-aided systems. Unsatisfactory knowledge led to significant omissions, deviations, or errors jeopardizing sortie success.

**10.7.8. Area 759, Operator Workstation Utilization.**

10.7.8.1. **Q** . Operator initialized, signed-on, and shutdown the operator workstation in accordance with governing directives. Was able to set-up and manipulate position in an efficient manner. Displayed working knowledge of soft keys, abbreviation keys, OWS diagnostics and workspace manipulation. Only minor deviations were performed not jeopardizing mission success.

10.7.8.2. **Q-** . Operator had difficulties initializing or shutting down position. Had difficulties using OWS diagnostics, setting up position and/or manipulating workspaces. Errors detracted from planned mission accomplishment but had no major effect on mission success.

10.7.8.3. **U** . Operator failed to initialize, shutdown, or manipulate the operator workstation. Major errors and/or deviation degraded mission accomplishment.

**10.7.9. Area 760, Graphics Functions.**

10.7.9.1. **Q** . Effectively set-up/manipulated graphics equipment and displays considering mission objectives, specific action points, likely threats, and system capabilities. Only minor deviations were performed not jeopardizing mission success.

10.7.9.2. **Q-** . Operator had difficulties manipulating graphics equipment and displays. Deviations detracted from mission objectives, but had no major impact on planned mission success.

10.7.9.3. **U** . Failed to properly set-up or manipulate graphics. Major errors or deviations jeopardized mission success.

**10.7.10. Area 761, Geo-Location Data.**

10.7.10.1. **Q** . Demonstrated the ability to take, verify, and manipulate manual and automatic lines of bearing without error. Was able to geo-locate emitters.

10.7.10.2. **Q-** . Had difficulty taking or verifying lines of bearing, manipulating lines of bearing, or geo-locating emitters. Did not detract from planned mission accomplishment.

10.7.10.3. **U** . Failed to demonstrate the ability to take and verify manual and automatic lines of bearing on assigned frequencies or was unable to geo-locate emitters. Jeopardized planned mission success.

**10.7.11. Area 762, Track Management.**

10.7.11.1. **Q** . Demonstrated the ability to read, interpret, manipulate and amplify tracks and track data. Maintained situational awareness through efficient use of data display options and dynamic queue usage. Was able to use available resources to assist in the identification of unknown tracks.

10.7.11.2. **Q-** . Had difficulty accomplishing the above tasks. Committed minor deviations or omissions that did not detract from planned mission success.

10.7.11.3. **U** . Was unable to demonstrate efficient track management procedures. Was unable to complete above tasks. Errors or deviations detracted from planned mission success.

**10.7.12. Area 765, Receiver Manipulation.**

10.7.12.1. **Q** . Demonstrated the ability to manipulate receiver settings for optimal collection in accordance with governing directives. Manipulated bandwidth, modulation, threshold, center tuning, and antenna settings appropriately. Only minor errors or deviations were performed that did not result in data loss and did not jeopardize accomplishment of mission tasking.

10.7.12.2. **Q-** . Had difficulty manipulating receiver settings. Manipulation problems caused minor loss of collection or loss of situational awareness but did not detract from overall mission success.

10.7.12.3. **U** . Failed to demonstrate the ability to manipulate receivers. Failure resulted in significant data loss which impacted planned mission success. Major errors jeopardized accomplishment of mission tasking.

**10.7.13. Area 767, System Applications.**

10.7.13.1. **Q** . Demonstrated the ability to effectively utilize system applications to enhance mission accomplishment. Used system applications, dynamic system files, technical databases and help files as required. Minor errors or omissions did not detract from task accomplishment.

10.7.13.2. **Q-** . As above but with omissions, errors, or deviations that detracted from task accomplishment but did not jeopardize mission tasking.

10.7.13.3. **U** . Failed to demonstrate proficiency on most of the above items. Errors, deviations, or omissions jeopardized accomplishment of mission tasking.

**10.7.14. Area 768, Tasking and Reporting.**

10.7.14.1. **Q** . Based on tasking, flight manuals, and applicable directives, effectively accomplished mission tasking and required reporting.

10.7.14.2. **Q-** . Did not comply with all applicable tasking, flight manuals, and directives. Minor errors, omissions or deviations in applying tasking and reporting guidance detracted from mission accomplishment but did not jeopardize mission success.

10.7.14.3. **U** . Failed to comply with applicable tasking, flight manuals, and directives. Major errors, omissions, or deviations jeopardized mission success.

**10.7.15. Area 769, CAB/ITW.**

10.7.15.1. **Q** . Recognized situations requiring Combat Advisory Broadcast/Imminent Threat Warning (CAB/ITW) and took appropriate action. Demonstrated knowledge of common terminology, combat terminology, code words, authentication methods, brevity usage, and possessed general radio discipline.

10.7.15.2. **Q-** . Slow to recognize situations requiring CAB/ITW or hesitated to take appropriate action. Poor knowledge of common terminology, combat terminology, code words, authentication methods, brevity usage, and general radio discipline.

10.7.15.3. **U** . Failed to recognize situations requiring CAB/ITW and/or failed to take appropriate action. Errors, omissions, or deviations jeopardized mission success or another platform's mission success.

**10.7.16. Area 770, Management Specific System Functions.**

10.7.16.1. **Q** . Demonstrated the ability to display, manipulate, and interpret processor and subsystem information, monitored operator activities, system status, and frequency assignment status and other management functions as required. Made conclusions on data received and took appropriate actions with minor omissions, deviations, or errors that did not detract from mission success.

10.7.16.2. **Q-** . Same as above but with omissions, deviations, or errors which detracted from mission success.

10.7.16.3. **U** . Unable to display, manipulate or interpret processor and subsystem information, or monitor operator activities, system status, or frequency assignment status or other management functions. Omissions, deviations, or errors jeopardized mission success.

**10.7.17. Area 771, Signals Collection and Recording. (CRITICAL). Note:** With uncorrectable equipment malfunctions, the operator should attempt to optimize data collection.

10.7.17.1. **Q** . Intercepted, recorded, and annotated tasked signal(s). Utilized adequate equipment settings and procedures. No significant signal collection lost. Mission success was not jeopardized.

10.7.17.2. **U** . Failed to intercept, record, and/or adequately annotate tasked signals. Significant deviations or errors. Lost significant data or jeopardized mission success.

## Chapter 11

### INFORMATION INTEGRATION OFFICER (IIO) EVALUATIONS

**11.1. General.** Grading criteria contained herein cannot cover every situation. Written parameters should be tempered with sortie objectives, evaluator judgment, and task accomplishment in the determination of overall aircrew performance. Specific requirements for each evaluation are as follows:

#### 11.2. Qualification Evaluations.

11.2.1. Ground Requisites. See [Table 3.1](#)

11.2.2. Evaluate all areas required in [Table 11.1](#) under crew position name unless not applicable to the specific aircraft and crew position as noted.

**11.3. Instructor Evaluations.** Evaluate all areas required in [Table 4.2](#) General grading criteria is located in [Chapter 4](#). Accomplish initial instructor evaluations during flight.

**11.4. Emergency Procedures Evaluation (EPE).** The EPE satisfies the in-flight requirements for emergency procedures.

**11.5. IIO Evaluation Requirements.** The table below lists areas for IIO qualification and instructor evaluations.

**Table 11.1. IIO Evaluation Requirements.**

Area	DESCRIPTION	NOTES	IIO
85	Communication Systems	1	R
759	Operator Workstation	1	R
29	Equipment/Systems Knowledge	1	R
83	Enabling Crew Execution	1	R
763	Multi-Intelligence Fusion and Analysis	1	R
843	Intelligence, Surveillance, and Reconnaissance (ISR) Asset Knowledge and Integration	1	R
921	Battlespace Awareness	1	R
761	Cooperative Geolocation	1	R
1031-1035	Reserved		
<b>Notes:</b> 1. Not required for SSOs. “R” refers to required evaluation areas.			

**11.6. General Grading Criteria.** For grading general areas, see [Chapter 4](#).

#### 11.7. Specific Grading Criteria.

11.7.1. Area 85, Communication Systems.

11.7.1.1. **Q** . Appropriately configured internal communication system, radios and chat systems. Successfully established network connectivity and applied effective troubleshooting procedures with only minor deviations, omissions or errors, which did not detract from mission success.

11.7.1.2. **Q-** . Operated communications equipment with minor errors, omissions, or deviations, which affected mission accomplishment but did not jeopardize mission success.

11.7.1.3. **U** . Failed to effectively operate communications equipment. Major errors, omissions or deviations jeopardized mission success.

#### **11.7.2. Area 759, Operator Workstation.**

11.7.2.1. **Q** . Operated operator workstation in efficient manner and in accordance with governing directives. Displayed working knowledge of basic systems functions. Effectively set-up/manipulated graphics and displays. Only minor deviations were performed not jeopardizing mission success.

11.7.2.2. **Q-** . Operated operator workstation with minor errors, omissions, or deviations, which affected mission accomplishment but did not jeopardize mission success.

11.7.2.3. **U** . Failed to effectively operate operator workstation. Major errors, omissions or deviations jeopardized mission success.

**11.7.3. Area 29, Equipment/Systems Knowledge. Note:** Equipment/system discussions may be accomplished at any time prior to or during the evaluation. Describe employment considerations, system collection capabilities, Quick Reaction Capabilities (QRC)/MCS capabilities, collection data flow and links/tracks to an adequate level.

11.7.3.1. **Q** . Satisfactory knowledge of applicable reconnaissance equipment and related systems.

11.7.3.2. **Q-** . Incomplete knowledge of applicable reconnaissance equipment and related systems. Aware of and understands system limitations and cautions.

11.7.3.3. **U** . Unsatisfactory knowledge of applicable reconnaissance equipment and related systems. Unaware of or does not understand system limitations or cautions.

#### **11.7.4. Area 83, Enabling Crew Execution.**

11.7.4.1. **Q** . Responded to crewmember requests in a timely manner. Anticipated crewmember needs and acted appropriately. Coordinated adequately with theater and global National-Tactical Integration (NTI) cells. Prepared and disseminated NTI file, situational picture and other crew assistance files, in accordance with local guidance.

11.7.4.2. **Q-** . Responded to crewmember requests in a delayed manner. Did not anticipate/identify some opportunities to assist the crew. Committed errors or omissions with files for dissemination to the crew. Errors affected mission accomplishment but did not jeopardize mission success.

11.7.4.3. **U** . Failed to respond to crewmember requests. Did not identify or act on situations that could assist crewmembers. Failed to prepare appropriate files for dissemination to the crew.

#### **11.7.5. Area 763, Multi-Intelligence Fusion and Analysis.**

11.7.5.1. **Q** . Effectively extracted intelligence information for fusion, analysis and dissemination. Made analytical conclusion(s) relevant to mission or examiner provided data and communicated analytical conclusion(s) with appropriate compartment head and/or external agencies. Minor errors or deviations did not detract from task accomplishment or the accomplishment of mission tasking.

11.7.5.2. **Q-** . Minor errors, omissions, or deviations in extracting intelligence data for fusion, analysis and/or dissemination detracted from effective mission accomplishment but did not jeopardize mission success.

11.7.5.3. **U** . Failed to comply with applicable procedures pertaining to effective multi-intelligence fusion and analysis. Major errors, omissions, or deviations jeopardized mission success.

#### **11.7.6. Area 843, ISR Asset Knowledge and Integration.**

11.7.6.1. **Q** . Explained the communications and ISR integration plan for tactical, theater and national entities/stakeholders. Demonstrated adequate knowledge of blue ISR assets capabilities and employment considerations. Identified opportunities for ISR integration and executed cross-cue attempts in accordance with local guidance. Displayed only minor errors or omissions which did not jeopardize mission success.

11.7.6.2. **Q-** . Explained the communications and ISR integration plan with errors or omissions that could cause misunderstanding, but did not jeopardize mission success. Demonstrated errors or omissions in knowledge of blue ISR assets capabilities and employment concern. Missed some opportunities for ISR integration or cross-cue. Errors or omissions affected mission accomplishment but did not jeopardize mission success.

11.7.6.3. **U** . Failed to explain the communications and ISR integration plan. Demonstrated unsatisfactory knowledge of blue ISR capabilities and employment considerations. Failed to identify opportunities for ISR integration or execute appropriate cross-cue attempts. Major errors, omissions, or deviations jeopardized mission success.

#### **11.7.7. Area 921, Battlespace Awareness.**

11.7.7.1. **Q** . Built and maintained situational awareness on the operational environment, blue force disposition, and activity onboard the aircraft. Communicated relevant information with compartment heads, crew members, and/or external agencies. Minor errors or temporary loss of situational awareness did not detract from task accomplishment or mission success.

11.7.7.2. **Q-** . Committed minor errors or experienced temporary loss of situational awareness which affected mission accomplishment but did not jeopardize mission success.

11.7.7.3. **U** . Failed to build, or built and subsequently failed to maintain, situational awareness on the operational environment or onboard the aircraft. Errors, deviations, failure to effectively prioritize tasks and loss of situational awareness jeopardized mission success.

#### **11.7.8. Area 761, Cooperative Geolocation.**



11.7.8.1. **Q** . Described cooperative geolocation capabilities, limitations and employment to an adequate level. Demonstrated procedures to establish a cooperative geolocation session.

11.7.8.2. **Q-** . Demonstrated errors or omissions in knowledge of cooperative geolocation capabilities, limitations and employment, or procedures to establish a cooperative geolocation session.

11.7.8.3. **U** . Failed to describe cooperative geolocation capabilities, limitations and employment in a satisfactory manner. Could not demonstrate procedures to establish a cooperative geolocation session.

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Deputy Chief of Staff, Operations

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 33-360, *Publications and Forms Management*, 1 December 2015

AFI 33-322, *Records Management and Information Governance Program*, 6 March 2020

AFPD 11-4, *Aviation Service*, 12 April 2019

AFMAN 11-2RC-135V1, *RC/OC/WC/TC-135 Aircrew Training*, 13 September 2019

AFMAN 11-2RC-135V3, *RC/OC/WC/TC-135 Operations Procedures*, 3 April 2020

AFI 11-200, *Aircrew Training, Standardization/Evaluation, and General Operations Structure*, 21 September 2018

AFI 11-202V2, *Aircrew Standardization and Evaluation Program*, 6 December 2018

AFI 11-202V2 ACCSUP, *Aircrew Standardization and Evaluation Program*, 23 April 2019

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System of Records Notices, *F011 AF XO A*, 22 March 2020

Title 10, *United States Code (USC)*, § 9013, 22 March 2020

***Adopted Forms***

AF Form 8, *Certificate of Aircrew Qualification*

AF Form 847, *Recommendation for Change of Publication*

AF Form 679, *Air Force Publication Compliance Item Waiver Request/Approval*

***Abbreviations and Acronyms***

**AA**—Airborne Analyst

**AC**—Aircraft Commander

**ACC**—Air Combat Command

**ACT**—Air Communication Terminal

**AF**—Air Force

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFR**—Air Force Reserve

**AFPD**—Air Force Policy Directive

**AMS**—Airborne Mission Supervisor  
**ANG**—Air National Guard  
**APV**—Approach with Vertical Guidance  
**AR**—Air Refueling  
**ARMS**—Aviation Resource Management System  
**ASE**—Airborne Systems Engineer  
**ASR**—Air Surveillance Radar  
**ATC**—Air Traffic Control  
**ATD**—Aircrew Training Device  
**ATS**—Airborne Tracking System  
**CAB/ITW**—Combat Advisory Broadcast/Imminent Threat Warning  
**CG**—Center of Gravity  
**CMC**—Cryptologic Mission Crew  
**CO**—Cryptologic Operator  
**CRM**—Crew Resource Management  
**CTS**—Combat Training Squadron  
**DA**—Decision Altitude  
**DLO**—Data Link Operators  
**DRU**—Direct Reporting Unit  
**DVIS**—Digital Visual Imaging System  
**EDIS**—Environmental Data Instrumentation Software  
**EFB**—Electronic Flight Bag  
**ELINT**—Electronic Intelligence  
**EPE**—Emergency Procedures Evaluation  
**EPR**—Engine Pressure Ratio  
**EWO**—Electronic Warfare Officer  
**FAF**—Final Approach Fix  
**FE**—Flight Examiner  
**FMS**—Flight Management System  
**FOA**—Forward Operating Agency  
**IDARMS**—Integrated Data Annotation, Recording and Mapping System  
**IF**—Intermediate Frequency

**IFF**—Identification Friend or Foe  
**IFR**—Instrument Flight Rules  
**IIO**—Information Integration Officer  
**ILS**—Instrument Landing System  
**INIT**—Initial  
**INSTM**—Instrument  
**INSTR**—Instructor  
**IP**—Instructor Pilot  
**IQ**—In-phase and Quadrature  
**ISR**—Intelligence, Surveillance, and Reconnaissance  
**KVM**—Keyboard, Video, Mouse  
**LDA**—Localizer Type Directional Aid  
**LNAV**—Lateral Navigation  
**LPV**—Localizer Performance with Vertical Guidance  
**MAC**—Mean Aerodynamic Chord  
**MAJCOM**—Major Command  
**MAP**—Missed Approach Point  
**MCS**—Modern Collection Systems  
**MDA**—Minimum Descent Altitude  
**MDS**—Mission Design Series (e.g., RC-135, KC-10, E-8)  
**MLT**—Maintenance Laptop  
**MSN**—Mission  
**NAF**—Numbered Air Force  
**NDB**—Non-Directional Beacon  
**NGB**—National Guard Bureau  
**NM**—Nautical Mile  
**NTI**—National-Tactical Integration  
**OFT**—Operational Flight Trainer  
**OG**—Operations Group  
**OG/CC**—Operations Group Commander  
**OGV**—Operations Group Standardization and Evaluation  
**PAR**—Precision Approach Radar

**PQ**—Pilot Qualification

**QRC**—Quick Reaction Capabilities

**QUAL**—Qualification

**RF**—Radio Frequency

**RJMT**—Rivet Joint Mission Trainer

**RNAV**—Area Navigation

**RON**—Remain Over Night

**RVCT**—Rendezvous Control Time

**SIF**—Selective Identification Feature

**SIMCERT**—Simulator Certification

**SLAATOS**—Surveillance, Locations, and Acquisition Array, Tracker Optical System

**SMT**—Sensor Maintenance Technician

**SSD**—Signal Search and Development

**SSO**—Senior Staff Officer

**STAN/EVAL**—Standardization and Evaluation

**STP**—Scientific and Technical Processing

**TACAN**—Tactical Air Navigation System

**TC**—Tactical Coordinator

**TCOL**—Terminate Collect

**TOT**—Top of Track

**TVC**—Training Value Code

**VFR**—Visual Flight Rules

**VNAV**—Vertical Navigation

**VOR**—VHF Omni Directional Radio Range

### ***Terms***

**Airborne Systems Engineer (ASE)**—The generic term for the RC-135S/U/V/W reconnaissance system maintenance technicians. ASE requirements apply to all ASE positions unless otherwise directed.

**Aircraft Commander (AC)**—Pilot who has been certified to perform "pilot-in-command" duties.

**Airmanship**—An aircrew member's continuous perception of self and aircraft in relation to the dynamic environment of flight, threats, and tasking, and the ability to forecast, then execute, tasks based on that perception.

**Copilot**—Pilot qualified to perform duties in the right seat only.

**Critical Phases of Flight**—Take-off, air refueling, approach to landing, landing, or any flight maneuver specifically requiring immediate access to controls. Approaches to planned missed approaches and air refueling rendezvous are not considered critical phases of flight.

**Deviation**—Performing an action not in sequence with current procedures, directives, or regulations. Performing action(s) out of sequence due to unusual or extenuating circumstances is not considered a deviation. In some cases, momentary deviations may be acceptable; however, cumulative deviations should be considered in determining the overall qualification level.

**Error**—Departure from standard procedure. Performing incorrect actions or recording inaccurate information.

**Flight Examiner/Evaluator**—A crew member designated to administer evaluations.

**Instructor**—Crew member trained, qualified, and certified by the squadron commander as an instructor to perform both ground and in-flight training.

**Major (deviation/error/omission)**—Detracted from task accomplishment, adversely affected use of equipment, or violated safety.

**Minor (deviation/error/omission)**—Did not detract from task accomplishment, adversely affect use of equipment, or violate safety.

**Omission**—To leave out a required action or annotation.

**Sensor Maintenance Technician (SMT)**—The OC-135 Open Skies system maintenance technicians.

**SPOT**—Aircrew evaluation, EPE, examination or the evaluation of a specific event that does not intend to satisfy the requirements of an initial, periodic or requalification evaluation